

THE MODERN BAKER CONFECTIONER & CATERER

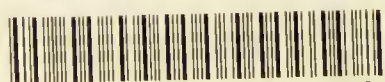


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THE MODERN BAKER
CONFECTIONER AND CATERER





A CITY BAKER'S SHOP

THE MODERN BAKER CONFECTIONER AND CATERER

A PRACTICAL AND SCIENTIFIC WORK
FOR THE BAKING AND ALLIED TRADES

EDITED BY

JOHN KIRKLAND

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BAKERY SCHOOL BOROUGH POLYTECHNIC INSTITUTE LONDON

WITH CONTRIBUTIONS FROM LEADING
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CHAPTER LV

BAKERY FITTINGS AND LABOUR-SAVING APPLIANCES

Long hours of work in a bakery are sometimes due to want of knowledge or want of ability on the part of the workmen; sometimes they are due to the task being too great for the number of men employed; but want of oven capacity frequently protracts the hours of labour, and a less apparent but important contributory cause is the unsuitability or insufficiency of appliances. In previous chapters the description of the use of machines and patent ovens has been given at some length, but it is surprising how ineffective even expensive machinery may be if accessory appliances are not provided to expedite the work.

In an up-to-date modern bakery everything is done to effect economy, and appliances are provided that make each operation as precise and easy to record as possible, so that one man may be instructed to attend to it as well as another. Beginning with the oven, it is a common experience to find that, regarding the stokehole of bakers' ovens, there is the greatest disorder in the way in which fuel is stacked, and the greatest laxity in the manner in which quantities are recorded. A suitable method of recording the quantity of fuel used and the value of heat received from it has been already described; but as it is not always convenient to weigh fuel, reliable data can be easily obtained by its careful measurement. For this purpose an iron bin with an open top and a slide door at the bottom should be provided. It is easy by one weighing to ascertain the exact capacity of the bin when filled to various heights and when quite full. By this means the quantity of coke used each day can be properly ascertained, and an efficient check kept on its use, at the same time that the stokehole is maintained in an orderly condition.

At the front of the oven a little thought can devise inexpensive appliances that facilitate the work with the minimum of labour. If the ovens are of the peel sort the peels should be kept overhead, the peel heads in a box convenient to the oven mouth, the handles in a rack the proper distance away. When short and long peels are used two racks or supports for the ends of the shafts may be provided, the one nearer the oven being a little higher than the other. The peel heads are best kept on their edges, as this necessitates only a very narrow box with a division for each peel head, and it keeps the peels cleaner. This arrangement expedites the work considerably, and is much better than stacking a lot of peels in a corner, where they are always in danger of being knocked down. If the ovens are of the drawplate type, a special brush should always be kept on a convenient nail or shelf near the front of the oven to brush off the plate, and the long flat boards for clearing the plate should have holes in them and be hung conveniently at the side of the oven. When bread is to be set or

Causes of Long Working Hours.

Waste in the Stokehole.

Racks for Peels.

Accessories of Drawplate.

drawn in a peel oven, it is convenient to have a small table with a zinc-lined top on castors so that it can be easily turned into position at the side of the oven; a light frame rest should also be provided for the end of the peel. When the ovens are of decker type, it is necessary to have a convenient table at the level of the top oven as well as of the bottom.

Rise-and-fall Tables. To meet this double requirement a rise-and-fall table (fig. 228) has been designed, to be used either with peel ovens or as a

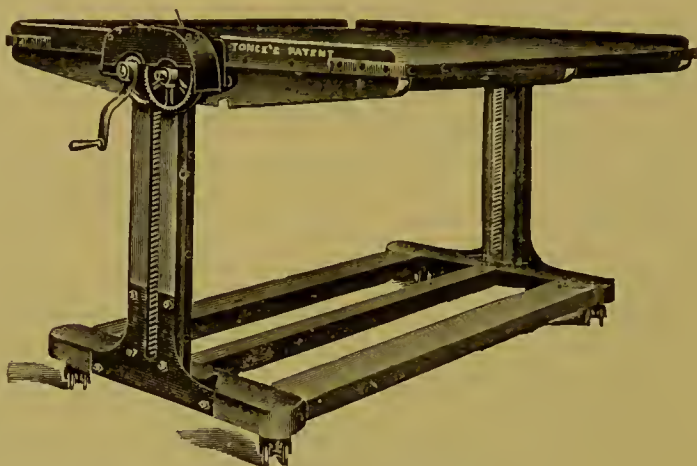
drawing table for decker draw-plates. An ordinary strong table with zinc-lined top, and with as many shelves as possible underneath to take the hot tins as they come from the oven, serves the purpose of a draw-table; but as space is usually an important consideration in a bakery, appliances that serve more than one purpose are extremely handy, and a good deal of ingenuity has been exercised in recent years in saving space in this way. Fig. 229 shows an appliance of this kind.

Combination Proving Rack. It is a combined proving rack (a)

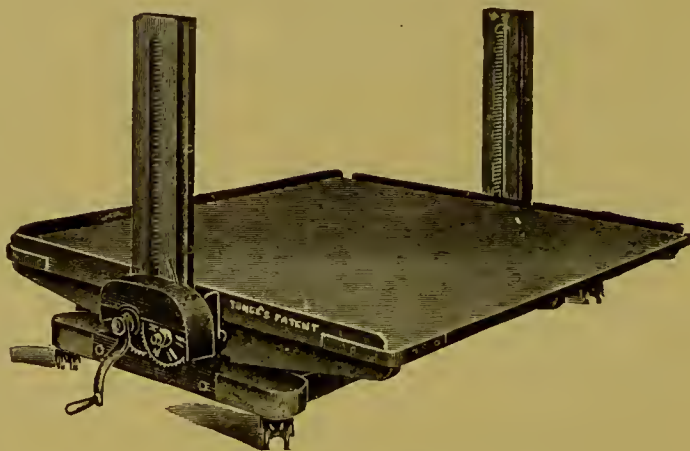
for tin bread which can be converted with ease into a drawing table (b). The sides are divided and hinged so as to fall

over and form a table top, and the top is hinged so as to fall down and form a back. When let down in position to form a drawing table, the top and part of the back are covered with galvanized iron, which is convenient for greasing tins or packing goods. When the appliance is in use as a prover, a cloth cover fitted on a patent metal roller with spring inside can be let down in front and will remain in any desired position, so that as each board of tins is filled it can be covered to prevent draught.

As drawplate ovens are now very much in use, there are many devices adapted for their speedy loading and discharging, as it is of the utmost



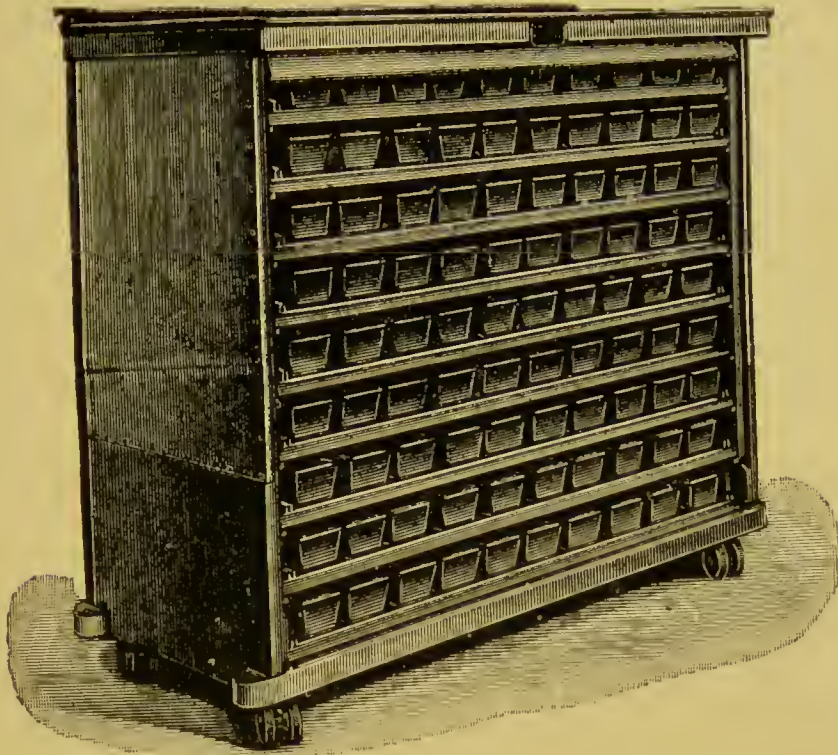
Raised. Maximum height, 3 ft. 9 in.



Lowered. Minimum height, 1 ft. 1½ in.

Fig. 228.¹—Rise-and-fall Table

¹ The illustrations, figs. 228-230, 241-245, are the copyright of Messrs. Tonge, Pendleton.



As Proving Rack



As Drawing Table

Fig. 229.—Combined Proving Rack and Drawing Table

importance that the plate should not be allowed to stand out a minute longer than necessary. A comparatively simple but efficient loading arrangement consists of long boxes the width of the plate, but with one side hinged to drop down to allow the bread to be discharged on to the plate. As these boards are filled, and as their sides are deep enough to allow the loaves to prove without touching the bottom of the board above, they are piled one on top of another, each board forming a cover for the one underneath. When ready for setting,

Drawplate
Loading
Setters.

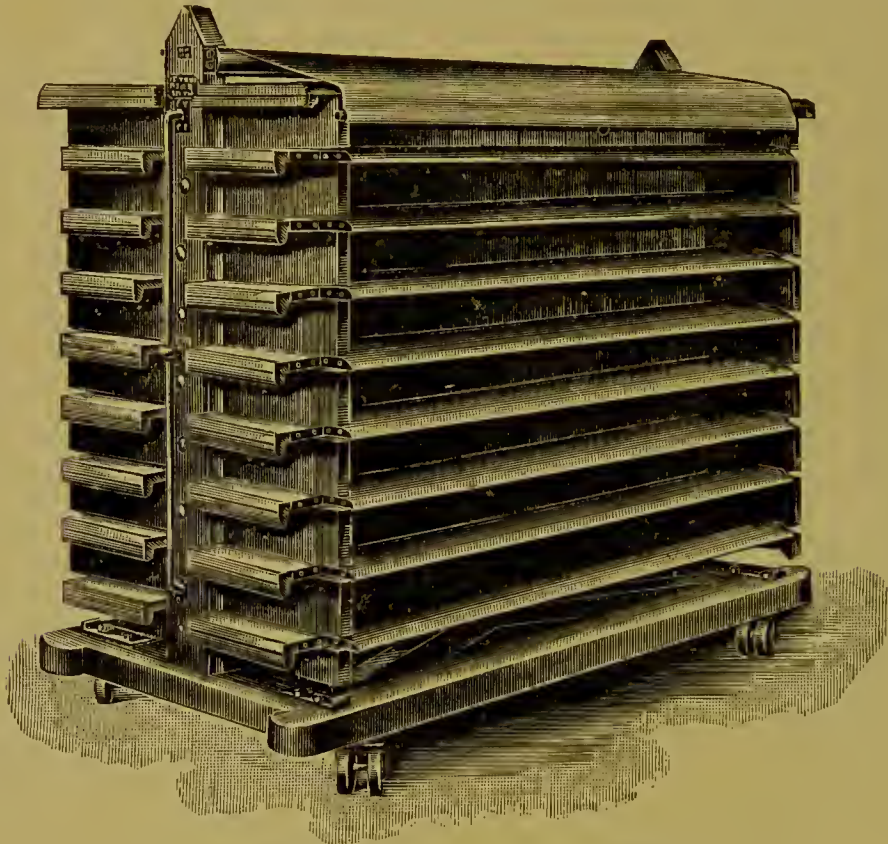


Fig. 230.—Proving Rack and Setter, Combined

the side, which is kept in position by a very simple drop clip at both ends, is released, and two men slide the loaves quickly on to the plate.

A more elaborate setting arrangement is shown in fig. 230. This is also a Tonge patent. The advantages claimed are that as the trays are quite flat and have no high sides they are much lighter to handle, whilst all the advantages of having sides and ends are obtained by the construction of the rack. The trays have not to be drawn wholly out when filling, as they hold themselves in position when half drawn out, so that the men can readily get at the back row of tins. Another form of "setter" for drawplate ovens is shown in fig. 231, and by an ingenious arrangement the boards of the setter can be used in succession as draw-tables for the bread after it is baked, thus obviating the necessity of handling the bread at all. The usual fitting for discharging drawplate

Sideless Setters.

ovens is, however, an ordinary stout table (fig. 232) with galvanized-iron top and with a small ledge round three sides.

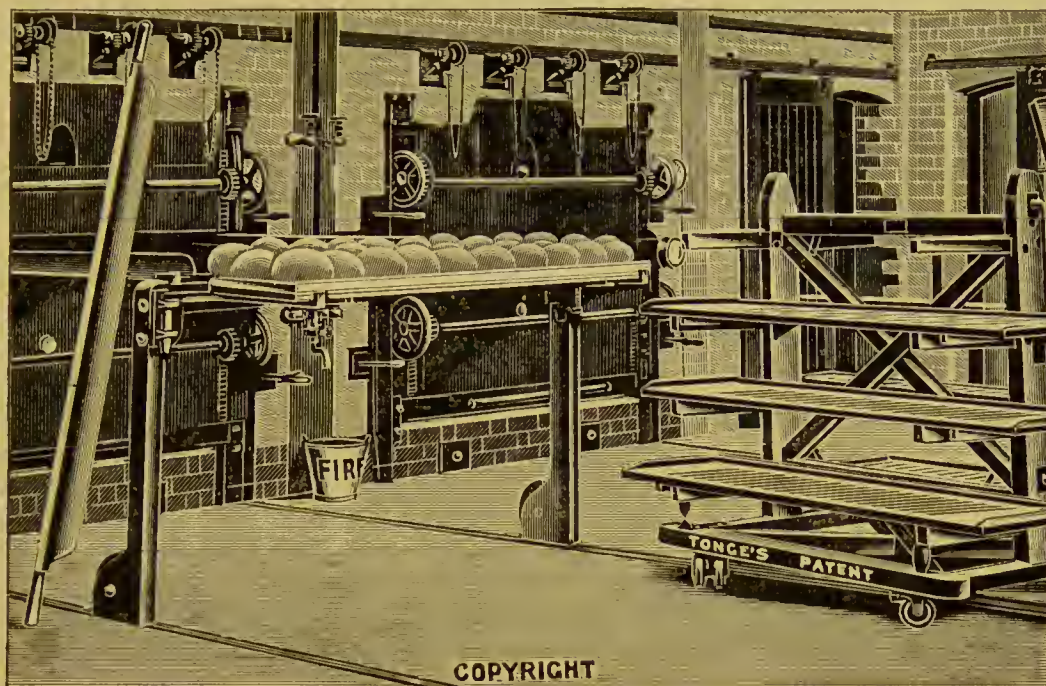


Fig. 231.—Setter for Drawplate Ovens

The tables in a bakery should all have good thick tops, preferably of some hard wood that will not splinter. What is known in some places as

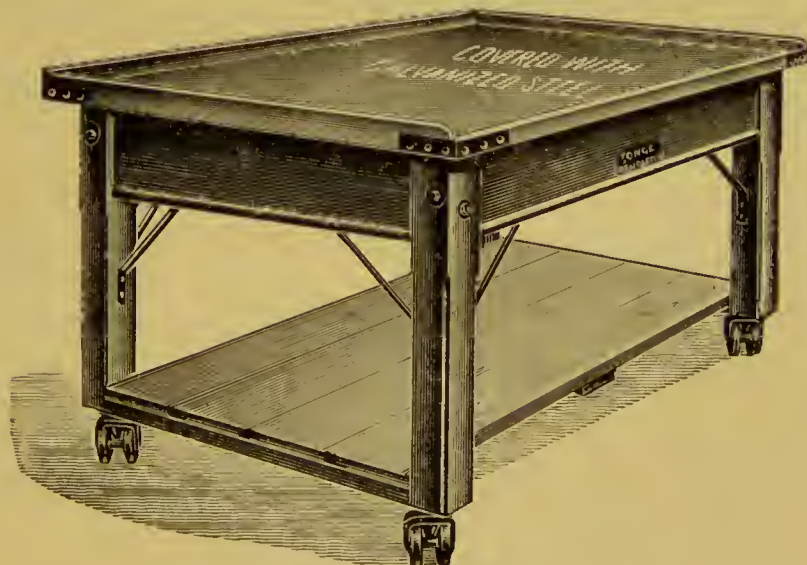


Fig. 232.—Discharging Table for Drawplate Ovens

plane-tree, and in others as sycamore, is very suitable for this purpose. Some bakers object to such hard wood, because its surface be- Hardwood
comes so smooth that it does not grip or hold the dough when Table Tops.
moulding. This fault is only apparent to bakers who have been in the

habit of working on softwood tables, and who have learned to expect the table to do part of the work; but to anyone familiar with a hardwood table top the comfort, freedom from splinters, and the good wearing qualities of the table are more than sufficient to compensate for any seeming disadvantages attaching to them, and to these men there are no difficulties of moulding or any other bakery operations. It is common now to find bakery tables as well as other fittings mounted on strong castors to facilitate cleaning; but unless the table is a very large and heavy one it is really better to have only one side so mounted, as this ensures its keeping in position and gives steadiness.

When a considerable quantity of paste goods has to be made it is neces-

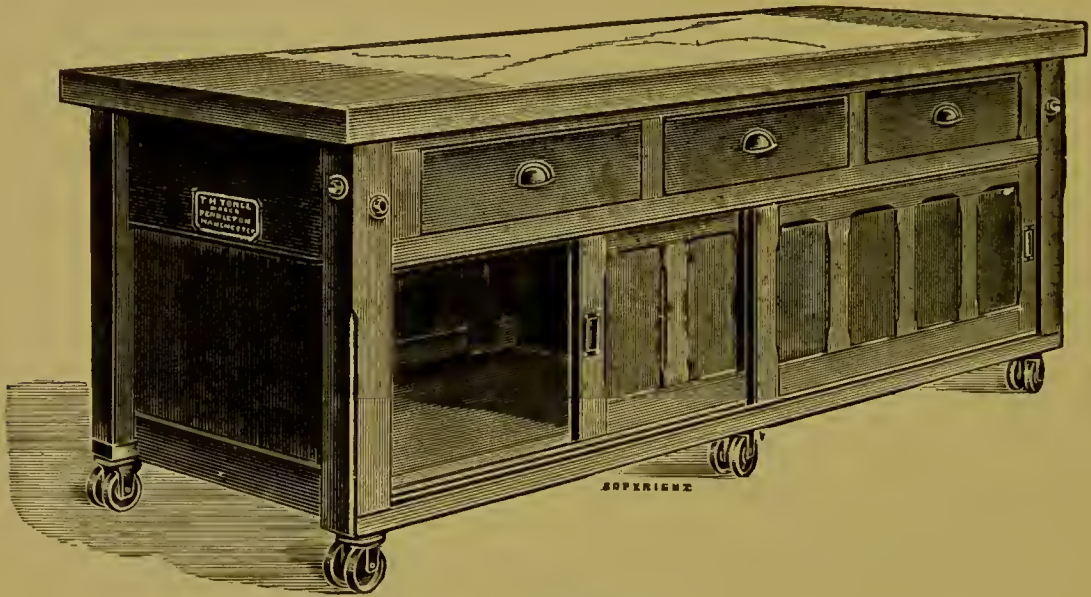


Fig. 233.—A Confectioner's Table

sary that for summer work a table with a marble slab should form one of Confectioners' the fittings. Fig. 233 shows such a fitting, with drawers and Tables.

cupboards under, so that the many small utensils used by confectioners can be neatly stored away when not in use. This arrangement is useful when bread bakers and confectioners have to use the same bakery and the same tables; but the writer prefers the plan of keeping the small utensils as much as possible out in the open, each appliance in a suitable place of its own, and few doors to cover up utensils placed away in a dirty state or kept in an untidy condition (fig. 234).

One of the essential fittings in all bakeries that seems to persist in type is the dough trough. The usual form in English and Irish bakeries where hand work still prevails is a long deep trough with sloping sides, the front at a wider angle with the bottom than the back. The purpose of the slope on the front seems to be to allow room for the knees of the worker, so that he may stand in a position that gives him most power to perform the hard work of mixing and lifting. One of the objectionable things about troughs of this sort, especially if the

LEADING ENGLISH MILLERS

JOSEPH RANK, born in 1854, son of a Hull miller, was educated at Hull and York. He entered his father's mill in 1868, and took charge of the business in 1880. Mr. Rank was one of the first in Britain to recognize the advantages of the roller system of milling, and introduced it in a new mill built near the Hull Docks. He is now owner of at least three of the largest mills in the kingdom, at Hull, Cardiff, and London. He takes a keen interest in trade affairs, and has been President of the National Association of British and Irish Millers. He is an active Wesleyan Methodist.

ALFRED LEETHAM, born in 1864, became associated with the milling business in 1880, and is now director of the well-known milling firm of Henry Leetham & Sons, Limited, York. He has been President of the National Association of British and Irish Millers and of the Master Bakers' Pension and Almshouse Society. He takes a keen interest in the public affairs of the city of York, but business engagements have hitherto prevented him from accepting public office. He is a keen sportsman in various directions.

WILLIAM A. VERNON, born at Uttoxeter in 1860, entered the milling business on leaving school. He takes special charge of the London mills and business of his firm, and in 1904-1906 he superintended the erection and equipment of extensive new mills established on the Thames. He is a Fellow of the Institute of Hygiene.

WILLIAM EDGAR NICHOLLS was born in Somersetshire and educated at Taunton. He was apprenticed at the Albert Mills, Gloucester, and in 1879 entered the employment of Messrs. Spillers of Cardiff. He rapidly rose to be manager, and then managing director, and is now senior member of the firm of Spillers & Bakers, Limited, Cardiff and London. Mr. Nicholls has been twice President of the National Association of British and Irish Millers. He is a Justice of the Peace for Glamorgan-shire.





JOSEPH RANK
(Hull)



ALFRED LEETHAM
(York)



WILLIAM VERNON
(London)



W. E. NICHOLLS, J.P.
(Cardiff)

LEADING ENGLISH MILLERS

bottom is very narrow, is that their shape necessitates a great thickness of dough to cut through and lift while dough-making, and entails a greater strain on the worker than there is need for. The tendency now is to build the trough with a much wider bottom than formerly, and of course with sides sloping only very slightly. An old Scottish type of trough was usually called a dough table. It is built on higher legs than the sloping-side troughs just referred to, and is the same width at the bottom as at the top, with the sides quite perpendicular and not more than 16 in. deep. The higher legs allow the baker to stand in the most advantageous position for working, and the broad bottom entails only a comparatively thin sheet of dough to lift and turn, so that mixing in this form of trough is very much easier than in one with a narrow bottom. The writer has had a long

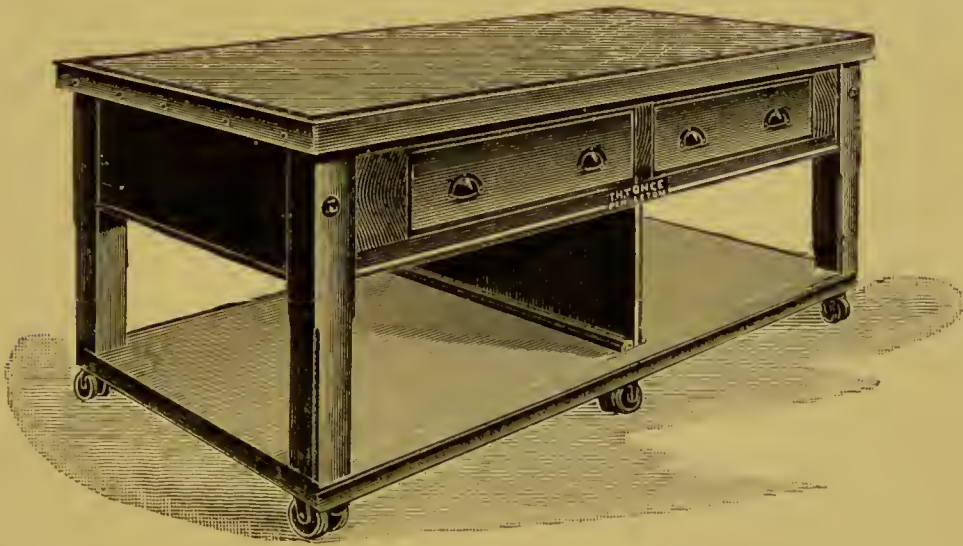
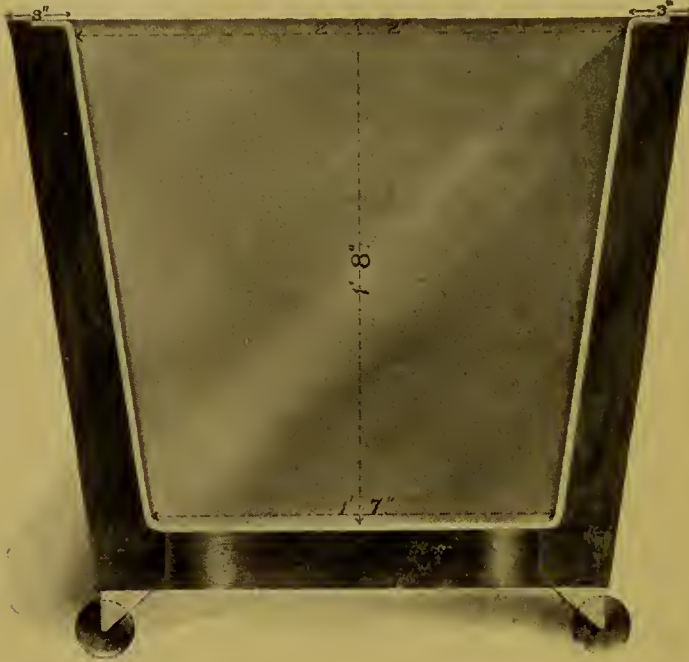


Fig. 234.—Confectioner's Table with Marble Top

practical experience with both types, and can vouch for the advantage from the workman's point of view of the wide-bottomed trough. On the Continent generally, at least in Austria, Germany, Belgium, and Holland, the prevailing type of dough trough is of galvanized iron, and is round at the bottom. It is possible to have a metal trough of this kind jacketed either for water or steam, so that the temperature of the dough can be raised or lowered should occasion require. In small bakeries, where the oven room is limited and the working staff small, it is a measure of safety to be able to accelerate or retard the speed of working of a dough by means of a jacketed trough in this way. On account of the increased expense this special kind of trough has not, however, been generally adopted.

The rounded form of trough makes dough-making very easy even as compared with the Scotch dough-table type, especially if the doughs are not very large. The trough is shallow and long, and the circular movement of the hands is quite in the natural direction. In Britain there is a prejudice against metal troughs, on account of their

conductive properties and the cooling effect on the dough. It may be pointed out that these iron troughs, although they may feel colder than wooden ones, are only at the same temperature as the atmosphere of the bakery, and only cool dough rapidly if the temperature of the dough is very much higher than that of the bakery; while if the bakery is actually



warmer than the dough, then the latter will gain heat quicker than in a wood trough, and will in consequence work quicker. One advantage accruing from the shape of the iron trough is that its shape makes it easier to clean and keep clean than a wood trough. To get over the difficulty just referred to as arising from the conductivity of metal a trough of the same shape as the metal ones, but with the bottom made of bent

wood, has been patented by Mr. Schur, and is meeting with a good deal of favour amongst bakers.

In Holland a composition consisting of fine sawdust and some sort of cement is used for making seamless troughs and table tops.

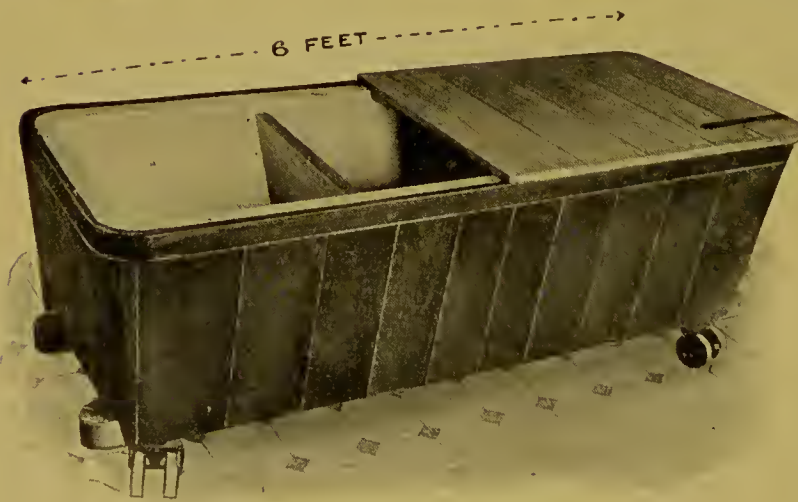


Fig. 235.—Blakeway's Patent Trough

This material can be cast or moulded into any shape, and presents when hardened a smooth surface that is very easily kept clean: all corners of the inside of the troughs and the junction of the bottom and sides are rounded to prevent the lodgment of dough and to facilitate cleaning. This material is very hard and durable, and stands washing or scraping. As a conductor of heat it is very little better than wood, so that even in a cold bakery it does not chill the dough. Troughs made of glazed porcelain are in

use in some considerable bakeries. These are easily kept clean, and as they are of thick material and glazed they do not have anything like the cooling effect of an iron trough on the dough. Glazed Porcelain Troughs.

A recent addition to types of troughs is that made by Tonge called Blakeway's patent. This is a metal trough specially enamelled inside and cased outside with wood. Fig. 235 shows a dough truck of this sort, but if wanted as a mixing trough it is built on legs in the ordinary way. In a trough of this kind the corners are all rounded, and as the inside is perfectly smooth the dough does not stick; the outside lining of wood prevents loss of heat. The original cost is considerably greater than that of a wood trough; but it is claimed, and not without reason, that the saving in scraps, the ease in cleaning, and the prevention

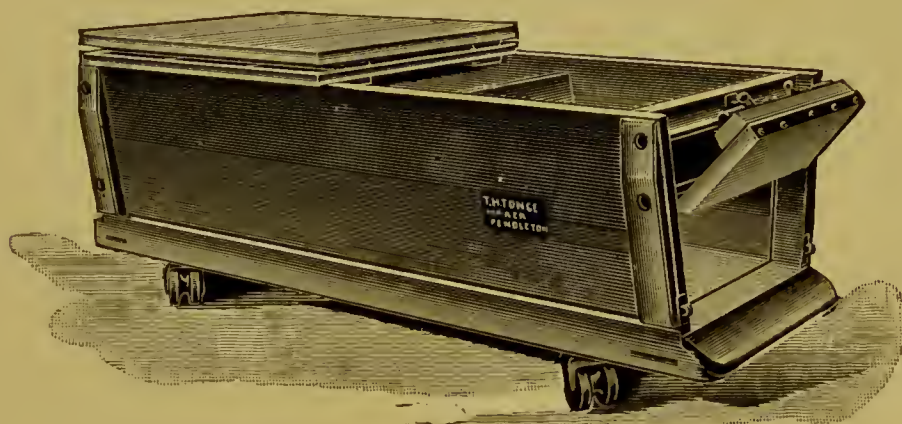
Blakeway's Patent Trough.


Fig. 236.—Machine Dough Troughs

of such diseases as “rope” in bread are much more than compensation for this extra cost.

As an accessory to the ordinary mixing trough in the bakery, a small trough which can be suspended within the large one has been patented by the United Yeast Company. The purpose is to provide one or more small troughs for mixing and proving the numerous little doughs required in the modern bakery, where so many kinds of bread and rolls are now made, under identical conditions with the large doughs. For brown and fancy breads, of which only small lots are needed, these little troughs are a great convenience. Use of Small Inset Troughs.

In machine bakeries the mixing trough has given place to the dough truck on low castors. These, like troughs, are usually made with sloping sides, although vertical-side trucks are easier emptied from the top. On account, however, of the needs of different types of machines, and of the varying position of these machines in the factory, dough trucks have to be modified in many ways to suit individual needs (fig. 236). The dough may be made at the top floor of a factory, and then requires to be dropped through a shoot to one or two floors underneath; in such a case it is a convenience to have an opening at the end or in the bottom of the truck through which the large

Dough Trucks.

pieces of dough as cut off can be pushed into the shoot instead of being lifted out at the top. By a simple device like this the workman's labour is much economized. Mention has been made of a shoot by which dough is conveyed from one floor to another; the most serviceable fitting of this kind with which the writer is acquainted is a long semi-circular planished iron trough or gutter, along which the dough slides very easily. There are no corners in it, and as the ends of the iron plates overlap in the direction in which the dough moves there is no obstruction. A shoot of this kind is more serviceable than a closed one of wood.

A large quantity of work can be done only when the men are provided

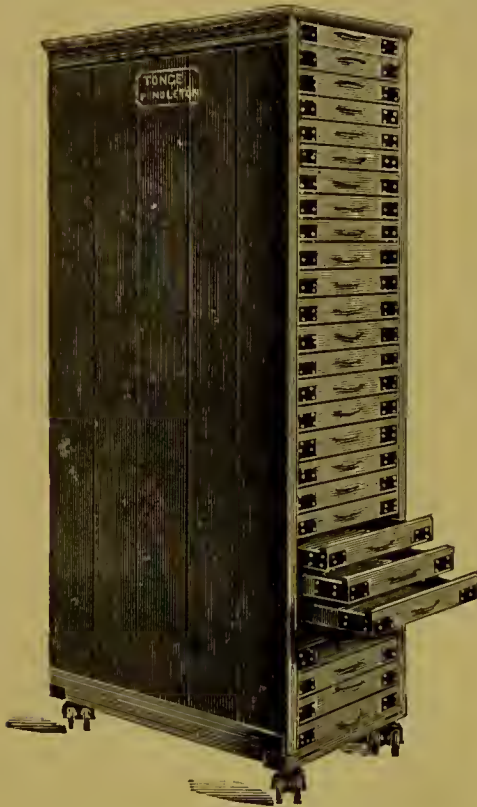


Fig. 237.—Case of Small Bread Drawers



Fig. 238.—Patent Double Prover

with suitable appliances, and for goods made with yeast and requiring proof the facilities for proving cannot be too good. In Scotland and Ireland, where large quantities of rolls and baps are made, these require to be proved in a warm dry place. The usual plan is to have one or more cases of shallow drawers underneath the table or in some warm situation, but generally fixtures; to obtain the necessary heat the drawers have to be heated singly, generally in the oven, which does not improve their chance of long use. Fig. 237 shows a case of small bread drawers on castors which when being filled, and while the rolls are proving, can be moved to any convenient warm place in the bakery. For buns and other goods needing a moist heat a prover fitted with a gas ring and a pan of water is provided (fig. 238), or where a steam boiler is available a pipe conveying naked steam from the boiler to

the prover is fitted. It is an objection to some provers fitted with a gas ring that this ring is placed in a sort of well, to which access can only be obtained by removing an iron-lined protecting board and steam spreader which covers the well; then this spreader must also be removed before the water pan can be removed or even filled with water. There is both difficulty and danger in some of the provers now provided for bakers—difficulties such as those just mentioned, and danger that the gas may be left alight after the work is done, for it is so boxed in that it cannot be seen unless by bending till the head nearly reaches the ground. It would be much better if the well part of the prover were fitted with a separate door, or the whole front of this part hinged like a flap, so that the whole steaming apparatus could be properly seen; and the water pan would be much better made square and run on slides quite independent of the gas burner underneath. If the prover is intended for naked steam from a boiler, the bottom part should be lead-lined, with a draw-off cock to remove the water from the condensed steam.

For proving Vienna batons or other type of long loaves, fig. 239 shows a convenient fitting. The boards in this have deep sides, but neither front nor back; the loaves are proved in cloths across the board. Prover for Vienna Batons. When they are in the case they can be kept quite free from skinning. At the oven the boards can be piled on top of each other ready for setting. As these

long loaves are difficult to handle when proved, especially if the dough is soft, a number of thin slips of wood shaped something like a bat

should be provided (fig. 240), on which the loaves are turned from the cloths and cut before being placed on the pecl. As this piece of wood is a little longer than the loaves and very thin, the softest piece of dough can be deftly turned on to it quite straight and shapely and without any finger marks even if it is well proved.

Tin bread requires long proof, generally before baking, and nothing

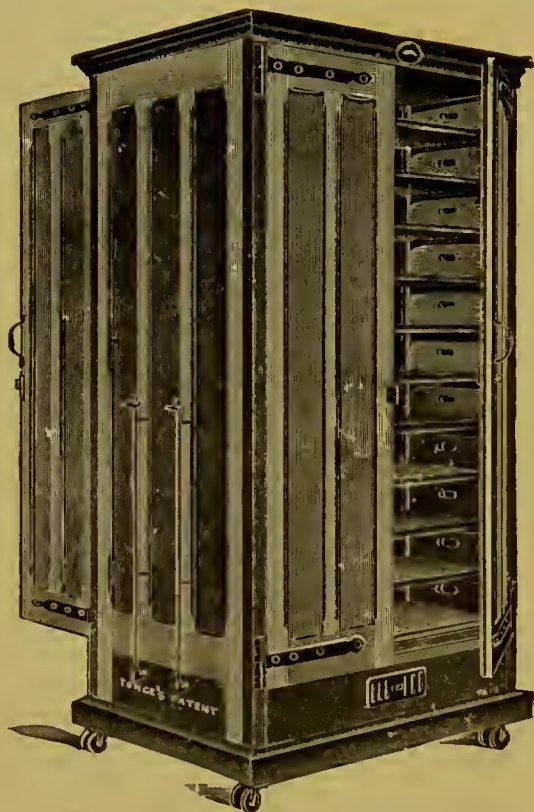


Fig. 239.—Vienna and Long Loaf Prover



Fig. 240

Stick for
Handling
Loaves.

is so important to secure even texture and a nice bright crust as keeping the loaves while proving at an equable temperature and free from draughts. The usual plan to secure these ends is to prove the loaves in a closed cupboard, or in a prover with cloths on rollers as the protection. An ingenious device (Handley's patent) consists in Handley's Patent Provers, an arrangement of bread setters for a drawplate oven set on top of each other a sufficient distance apart to allow the tin loaves to prove properly; then a cover is provided, slung on strong cords from

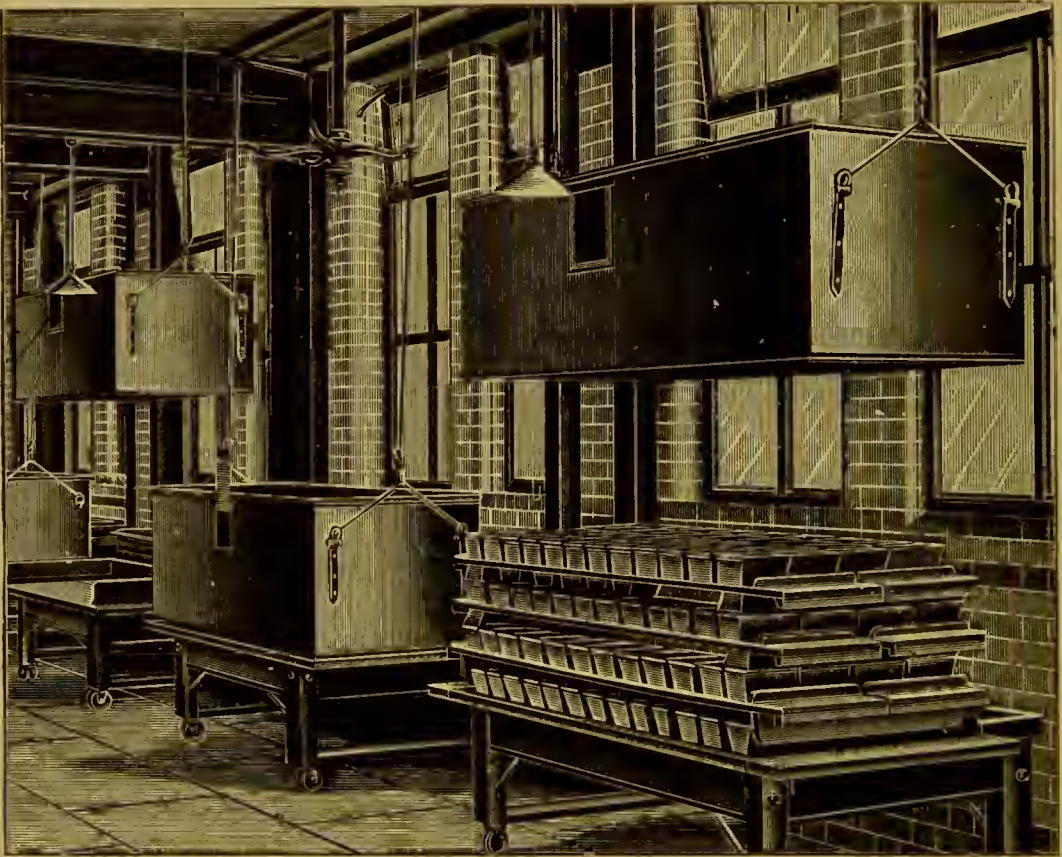


Fig. 241.—Handley's Patent for Tin Bread

pulleys (fig. 241) at the ceiling; the raising or lowering of this cover is facilitated by a balance weight.

Where crumby bread forms a considerable portion of the work, it is necessary to prove the loaves in boxes. These are best on castors, so that when setting, the whole case can be pulled up close to the side of the oven. The boards may be either piled up on top of each other on a rack (fig. 242) or placed in a proper case (fig. 243). The latter is the much better arrangement. If the former plan is adopted, it is necessary to relift all the boards after they are filled and place them in the reverse order to that they are first in; otherwise the loaves moulded last will be set first in the oven, and those moulded first are likely to be overproved.

Boxes
for Crumby
Loaves.

In bakeries where bread and confectionery are both made, it is much better that the confectioners should either have a special apartment to themselves or should at least have a part of the bakery with tables for their special work. Fig. 244 shows a combination table with drawers, racks, and other conveniences, which is a special fitting designed by Tonge to give the maximum of convenience in the smallest space. By means of the draw-boards with holes for beating pans, the whole table is available for other work, and the racks underneath facilitate the work by reducing the amount of running about needed between the table and a rack for tins placed elsewhere. A fitting specially adapted for the work of the confectioner increases very much the capacity of the workman, besides making his work pleasanter for himself.

A sugar or flour sieve is almost too common and simple an appliance to warrant mention here, but we must refer to an

ingenious device in this line that is worth the attention of every baker, confectioner, and caterer. This is Ward's patent sieve (fig. 245). This consists of a whole set of sieves, with a mesh ranging from that suitable for straining soups and gravies to one large enough for any purpose for which a sieve is needed. The sieves proper are simply round, with strongly wired rim; with these a set of three strong, block-tin frames are provided. The sieves are neatly numbered with a little brass tablet according to the mesh. Each sieve fits accurately into any of the frames. If it is desired to remove one sieve and replace it with



Fig. 242.—Nest of Boards

Confectioners' Table Fittings.

Sieves.

another, the operation occupies only a few seconds, and the frames and wiring of the sieves are so substantial that they fit together quite firmly. The writer has had some experience of these sieves, and can vouch for their efficiency. Everyone knows how awkward a great many sieves about a bakery may become when space is limited, and how soon they



Fig. 243.—Proving Case for Crumby Bread

break away at the part where they are joined to the wood rim, especially if they have been used for currant-cleaning or for straining liquids of any kind, and are put away damp or dirty. These sieves occupy no more space than so many round sheets of eardboard, and if placed in a neat rack they keep quite level and round; being quite flat, they are always easy to wash and dry. The three frames provided with the set of sieves are made to fit accurately into each other, so that if each is fitted with a sieve of different mesh it is possible to grade anything

being sifted, say almonds or sugar, into three sizes at one operation. The sieves may be used for any sifting purpose whatever, including fruit-cleaning.

Another simple bakery appliance that receives very little attention is



Fig. 244.—Confectioner's Combination Table

the scales. Any old weighing-machine is considered good enough for bakehouse use, with the result that small quantities of anything like chemicals cannot be weighed with any degree of accuracy, and goods are irregular in consequence. For accuracy, beam scales are very much better than the machine sort generally used, and amongst beam scales hanging ones have least in the nature of com-

Bakehouse Scales.

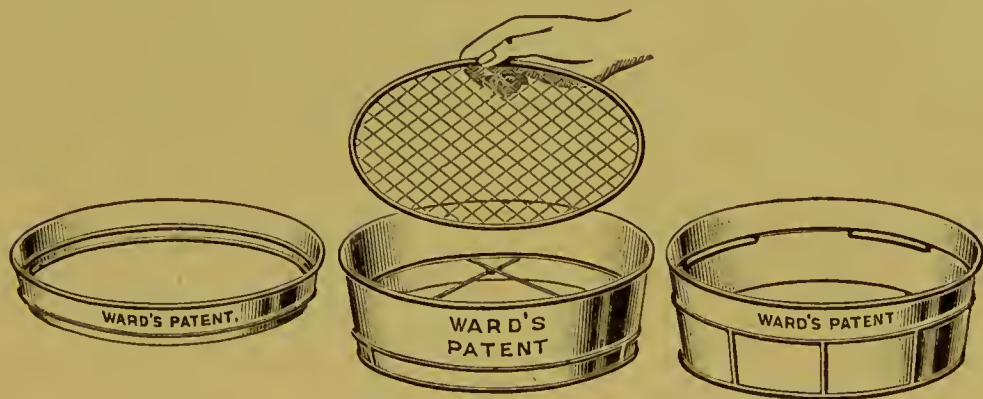


Fig. 245.—Wards' Patent Sieve

plications to cause them to go wrong. It is a good plan to suspend the hanging scales from a hook in the ceiling, and to have another cord with a balance weight attached to that carrying the scales, so that when not in use they can be pushed up and left suspended in any desired position. Scales hung in this way save table space, and as they get the minimum of rough usage, they keep fairly accurate.

After the bread and confectionery are baked, there can be a great deal of economy shown in the proper arrangement and disposal. It

may be accepted as a safe principle that nothing should be handled more frequently than absolutely necessary, and if by taking thought the bread or other goods can be packed as they come from the oven, in the number and form in which they are afterwards to be delivered to vanmen or to customers, much time can be saved in the course of Standardizing the week, and the goods are all the brighter for not Appliances. having been much handled. Thus it is convenient that the actual boards to be used in the vans should be those in which the bread is packed from the oven, and the number of loaves on each board should be the same. Much economy arises from a careful standardizing of the size of all fittings, whether sheets, boards, or what not, so that counting quantities becomes an affair of multiplication, and not, as too often happens, a weary plodding at addition, with its great possibilities of error. Some very crude appliances in the way of bread racks are provided in some bakeries, with compartments of varying sizes Bread and Pastry Racks. and boards of all sizes, the variations producing much extra work and causing confusion. A few pounds judiciously spent in proper bread-room racks and standardized trays or boards is money very well spent. Various styles of racks for both bread and confectionery can be obtained at low cost in convenient sizes, either to stand in the bread room for store racks or to be used for making up the orders of individual vanmen as required. All these appliances are best fitted with strong castors, so that they may be easily shifted for cleaning, or so that they may be packed right from the oven and unloaded straight into the delivery vans.

CHAPTER LVI

THE TESTING ROOM AND ITS EQUIPMENT

Every baker who aspires to attain a complete mastery of his craft should possess sufficient skill in testing to be able, whenever occasion requires, to submit his materials to an examination for commercial value and purity. It is by no means necessary that he should be a thoroughly trained chemist. Such chemical knowledge as he will require for conducting his special technical tests he can acquire during a course at any of the bakery schools throughout the country. This should be supplemented by following a recognized course in pure chemistry at a technical institute, special attention being paid to practical work.

The universal adoption of the experimental method in all matters appertaining to science and technology has led to the establishment of a vast number of critical methods for judging every kind of article, so that without exaggeration it might be claimed that we live in a "testing" age. Whereas formerly business men were content to buy their materials upon the guarantee of the vendor,

supplemented at most by a cursory examination of a specimen by sight, smell, &c., it is now quite everyday work in some large businesses to submit samples of every proposed purchase to searching physical and chemical tests before even considering the matter of price. This must not be taken as utterly condemnatory of the older methods, for it is perfectly certain that long experience frequently produced buyers of remarkable sagacity and unerring judgment. Rather, it must be ascribed to the recognition that the tracing of all defects to ultimate causes has revealed so many subtle properties which are intimately connected with the value and quality of an article, as to make it unsafe to trust entirely to the simpler methods which took account of external characters only, and could not possibly detect the hidden entities upon which those characters depended.

It has already been said that the ordinary tests of the bakery do not require the labours of a highly trained chemist. On the other hand, it is false economy to attempt always to do without such assistance; therefore, when questions arise requiring specialized skill for their investigation, such work should be entrusted to one who has made a study of experimental work and who may be regarded as an expert. This course is particularly to be recommended in all such matters as are likely to become matters of dispute. It may be urged that the best safeguard against buying low-quality or adulterated goods is to deal only with merchants of high repute whose integrity is beyond question. Without doubt this is perfectly true, for so cunningly is adulteration practised in these days that it frequently requires the application of the most refined and delicate processes of analytical chemistry in order to detect the fraud. Nevertheless, no skilled tradesman cares to be continually in a state of helpless dependence upon others, and he will not be content until he is in a position to check at will the guarantees of his merchants.

Assistance
of Chemical
Expert.

The ability to test a flour intelligently necessarily involves a fairly comprehensive knowledge of all its properties, and the man who can do this will frequently be able to take advantage of market opportunities which others less informed do not realize, or in practice he can speedily devise ways and means for overcoming defects whenever they arise without sacrificing large amounts of valuable raw material or displeasing customers by selling faulty goods.

It will seldom be found possible in ordinary bakery businesses to erect a special building for the laboratory. In rare instances, when an entirely new building of the factory type is being planned, it may be found possible to set aside a purposely designed room for this work; but in the great majority of cases the baker will have to find a small room or part of a room, generally in a private house, and this will have to be adapted as circumstances will permit to serve the purpose in view. It is inadvisable to attempt to carry on testing work either in the bakery or the flour store, as some may be tempted to do. Apart altogether from the difficulty of maintaining privacy in such situations, there are other

The Place of
the Laboratory.

very strong reasons why chemical work should be kept rigidly apart from the ordinary manufacturing processes. Flour is extremely prone to absorb any strong odours with which it may be in contact, and furthermore, the accuracy and efficiency of chemical apparatus cannot be preserved if it is kept in places where manufacturing operations are in progress. Since the testing work will almost certainly be in the hands of the master baker or some confidential assistant, the attachment of the laboratory to the office is both convenient and desirable, as tending to keep the control work compact and centralized. So much must depend upon the peculiar circumstances in every instance, that only a few general hints can be given for guidance in selecting a room. It should be as light and airy as possible, with a good window facing north or north-west for preference. If it can be obtained at the top of the house it is well, for this will avoid creating any nuisance to other occupants, ensures privacy, and usually permits of obtaining better lighting. The presence of a good fireplace is an advantage, for such a place can be fairly easily adapted to form a draught chamber for ignitions and other operations producing fumes.

Having decided upon the location, the walls should be stripped of paper, and, after stopping any holes, both walls and ceiling should be painted with **Preparation of Room.** three coats of zinc white. This will greatly improve the lighting, and no change of colour need be feared by the action of chemical fumes. If cost is of great importance, the painting may be done with one or other of the water paints or washable distempers now on the market, using a white or stone colour; the resulting surface will not be so good as an oil colour, however. Before commencing to paint, it may be advisable to have benches erected if much fixing to the walls is contemplated. The best material for flooring is cement or asphalt, for in such cases simple washing removes all dirt, and chemicals do not attack these materials. In most cases, however, the ordinary wood flooring will have to suffice. For the purposes of a food laboratory, covering the floor with good plain linoleum is advantageous and practically without danger. The surface can be easily kept clean by washing, and there are no crevices for dirt to accumulate.

The best arrangement of benches consists in running them round the four walls, leaving the centre of the room open. Where the centre space is very large a table may be put in with advantage, but care **Benches.** must be taken to allow sufficient space all round between the benches and table to move about comfortably. Benches should be about 4 ft. in height, with a top not more than 2 ft. 6 in. in width. If possible, have the bench top in teak; but if soft wood must be used, a thickness of $1\frac{1}{2}$ in. will suffice, and such wood should be impregnated. The following solutions are suitable for this purpose:—

SOLUTION I

| | |
|-------------------------|-----------------------------|
| 4 oz. aniline sulphate | } dissolved in 3 oz. water. |
| 2 oz. ammonium chloride | |

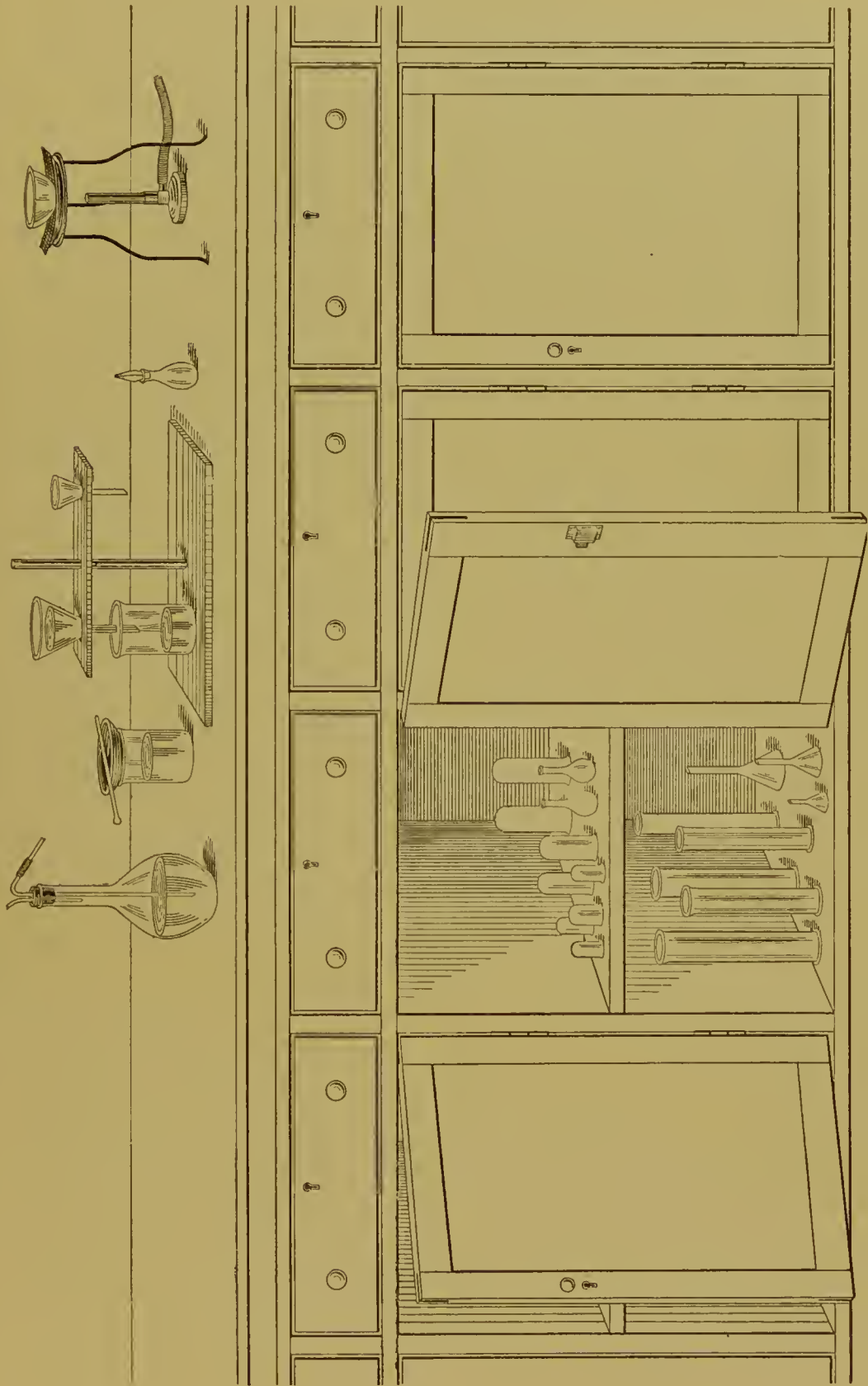


Fig. 246. — Laboratory Bench with Cupboards

Wash the bench thoroughly with the solution, and allow to dry. Afterwards apply

SOLUTION II

4 oz. copper sulphate (blue vitriol) } dissolved in $1\frac{1}{4}$ pt. water.
2 oz. potassium chlorate

Repeat the applications in the order named until the desired colour is obtained; then wash well with soap and water. Wood thus treated resists chemicals, and is said to be fireproof.



Fig. 247.—Bunsen Burner

The space underneath the benches is very useful for storing apparatus, reagent bottles, &c. A shelf should be run round the entire length. The provision of doors to the front, so as to convert the lower portion into a series of cupboards, greatly improves the tidy appearance of the room (fig. 246). Immediately under the bench top is an excellent position for drawers, and two or three should be provided for keeping corks and small tools.

One source of supply for both lighting and heating purposes is best; and since in most places electricity is too expensive to use as a heating agent, gas will generally be found most convenient. The service pipe should be led round at

Lighting
and
Heating.

least three sides of the room about 1 ft. above the bench top. At frequent intervals T's should be inserted, so that short lengths of pipe can be put in to make the various connections to burners.

Of course gas cocks must be put on at every T, so that each burner can be used and regulated without interfering with others. For supplying Bunsen burners (fig. 247) upon the bench, lengths of indiarubber tubing are usually employed, but there is somewhat less danger of accident when the flexible metallic tubing which can now be obtained so cheaply is used.



Fig. 248.—Retort Stand and Tripod

This tubing, however, suffers from the disadvantage of a slight loss of flexibility in sharp curves. Acid and other corrosive fluids attack the metal tubes, unless copper ones are purchased. The gas for lighting should be carried up the wall at convenient intervals, and rigid brackets carrying inverted incandescent-mantle burners should be used.

By this means the light is brought well over the work, and inconvenient shadows

are avoided. For heating, several Bunsen burners will be wanted, and a couple of tripods and retort stands (fig. 248) are needed to rest apparatus upon during heating operations.

For conducting burning operations, such as ashing foodstuffs, Kjeldahl's process, and for work entailing the production of much steam, gas, or other

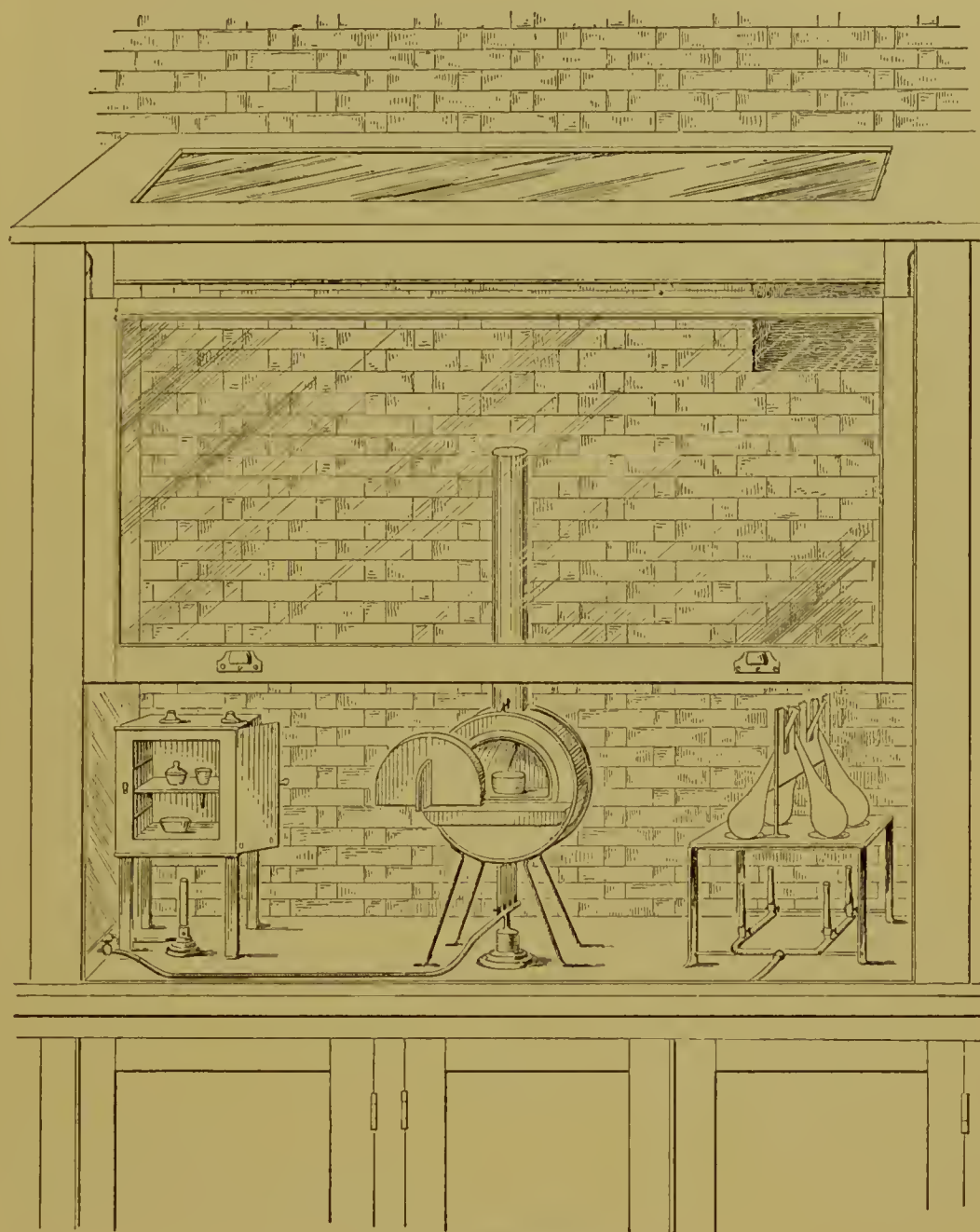


Fig. 249.—Fume Chamber

vapour, a hooded chamber with a chimney to the open air is absolutely necessary. If there is a fireplace already in the room, it is possible to make a very serviceable substitute for the ordinary fume chamber by Fume Chamber. fixing a light metal hood (such as is used in kitchens over gas stoves) to the chimney above the mantel, and leading the fume pipe through the breast of the chimney. A bench must be placed beneath the hood for apparatus to stand upon, the bench top being covered with stout sheet lead. Carry at least two supplies of gas to this bench. If no chimney is available, then one corner of the room must be set apart and converted into a fume chamber somewhat in the fashion illustrated in fig. 249.

A plentiful supply of water is indispensable, and there should be at least two faucets, so that condensing operations can be carried on without stopping the supply of water for other purposes. A good Water Supply. deep sink is necessary, the best form being about 2 ft. 6 in. \times 2 ft. \times 1 ft. deep. Doulton salt-glazed ware is very suitable. The drain from this sink must not be trapped, but the waste should be conducted by lead pipe, as much as possible without bends, and made to discharge over a rainwater gully. Surround the sink with a wooden bench, so that glass apparatus can be rested beside the sink during cleansing. The bench running in front of the window must on no account be occupied by permanent apparatus. It should be kept for examinations requiring a good light, such as colour tests, microscopic work, and all temporary operations.

The usefulness and tidiness of a laboratory depend largely upon the amount of shelf space it possesses. Nothing looks worse than benches littered with apparatus which is not in use. Whilst Reagent Shelves. work is in progress, the studied disorder of the apparatus is as necessary as it is impressive, but this is a totally different thing from the confusion of a place where nothing has its appointed situation. A double row of narrow shelves should be placed along one side of the room just above the bench. These shelves ought to be about 4 in. wide and 1 in. thick, a distance of 6 in. being allowed between each two to permit of bottles being readily withdrawn. One part of these shelves should be set apart for the liquid reagents in everyday use, and the other portion may be reserved for storing the stock of dry chemicals. All concentrated liquid chemicals ought to be kept in a cool, dark place; one of the cupboards underneath the benches is most convenient.

The quantity of apparatus necessary to equip a laboratory will, of course, depend entirely upon the range of work it is proposed to undertake, so that it is impossible to lay down any hard-and-fast rules upon this point. It is, however, fairly easy to say what things cannot be dispensed with if work is to be done worthy of the name, and it must then be left to the individual requirements to add those things which are deemed most useful as time reveals the need. For the purposes of bakehouse testing a good physical balance, such as is figured on p. 70, Vol. I, will be found all that is required. It is, however, strongly recommended that an air-tight case should be provided for it. A Balance. good case can always be had from the dealers at the time of purchasing at a very moderate cost. The balance is a delicate instrument, and every care requires to be taken to prevent the mischief caused by dust and damp, if it is to be kept in accurate working condition. A dirty, ill-adjusted, insensitive balance vitiates every experiment and falsifies every determination. Take care, therefore, of your balance, as the most delicate piece of mechanism in your possession. The balance needs to be kept on a firm stand in a permanent position free from vibration.

A bracket fastened to the wall is pre-eminently the best arrangement, for this isolates the instrument from tremors and vibratory movements in the room. The situation must be such that a good light falls upon the front of the balance—that is to say, the light should come from the side or rear of the operator. It is well to have a small drawer under the bracket, in which a camel-hair brush, weights, watch-glasses, and labels can be kept. A set of weights suitable for the work is shown in fig. 2, p. 17, Vol. I.

The accurate determination of moisture in flours, sugars, &c., and the drying of glutens, require the provision of a drying chamber which can be kept at a constant temperature of about 100° C. for any length of time. Water ovens in a variety of sizes can be purchased Water Oven. from any dealer. For ordinary purposes a copper oven, about $10 \times 8 \times 8$ in., will be found large enough. If an oven with a constant-level arrangement is purchased, connections will need to be made to supply water and an overflow to the drain. The oven then becomes perfectly automatic, and cannot run dry or become leaky. If the oven does not possess this attachment, care must be taken to see that it always has plenty of water in it. The oven should be kept in the fume chamber, so that escaping steam is led out to the open air (fig. 3, p. 74, Vol. I).

A set of stoppered reagent bottles will be required for keeping the testing solutions. About two dozen narrow-mouthed bottles of 125 c.c. ($4\frac{1}{2}$ fl. oz.) capacity will be sufficient for most purposes. General Apparatus. A similar number of wide-mouthed bottles will be found very useful for storing reserves of the various chemicals. These bottles should be neatly labelled—plain gummed labels will do—and the name of the reagent should be plainly written thereon, after which the label should be sized and finally varnished. A good supply of beakers in various sizes, boiling flasks, and test tubes, with a test-tube rack, must be laid in. These articles are inexpensive, and a plentiful supply will often avert the annoyance of having to throw away some test or experimental solution before apparatus can be obtained for fresh work. The test tubes should not be too small; $6 \times \frac{5}{8}$ in. is a good working size. For gluten determinations a number of white dishes about 4 in. diameter are absolutely necessary. These may be procured in enamelled iron, and are very durable. The porcelain ones are certainly neater, but they are so fragile that accidents are likely to be frequent. Some shallow iron dishes filled with sand, and a few pieces of wire gauze, will be needed for resting dishes and beakers on during heating. For the filtration of solutions from solid materials a few funnels of various sizes, with a small funnel stand, will suffice. A supply of filter papers must also be laid in.

A very large number of determinations in analytical chemistry depend upon the accurate measurement of liquid volumes, and for this purpose accurately graduated apparatus is obtainable from the dealers. Burettes. The burette is one of the most important of these instruments. It consists of a long, narrow tube, graduated throughout its length

into cubic centimetres, generally subdivided into fifths. The most useful size is 50 c.c. These burettes are provided either with glass stopcocks or with indiarubber and pinchcock jets. The glass stopcocks are capable of use with all solutions, if kept carefully lubricated, but the pinchcocks must only be used for solutions which do not decompose in contact with indiarubber. The food chemist is called upon frequently to determine very small amounts of acidity in various materials, and for this end an extremely dilute solution of alkali is used, generally $\frac{1}{10}$ or $\frac{1}{100}$ normal soda. For this purpose it is very convenient to have a burette and solution constantly ready for use. The illustration (fig. 250) shows such a burette for constant supply of the reagent. The burette with a two-way stopcock and side-filling tube can be purchased ready-made, and it is only necessary to connect, by means of glass and indiarubber joints, to a reservoir bottle containing the stock solution, kept on a shelf above the burette.

Pipettes are thin tubes with large bulbs in the middle. They are made in various capacities to measure definite volumes accurately.

For ordinary purposes about six should be ample, and the respective volumes should be 1 c.c., 5 c.c., 10 c.c., 20 c.c., 25 c.c., and 50 c.c. For the larger volumes, and for making up standard solutions, measuring flasks are indispensable.

They consist of very thin, pear-shaped measuring flasks, with long, narrow necks, upon which is engraved a line indicating the point to which the flask must be filled in order to contain the required volume. The

flasks are always engraved upon the bulb with the reputed volume, and also with the temperature which the liquid must attain for the measurements of the flask to be correct. A 100-c.c. and a 250-c.c. flask will be found the most useful sizes to procure. They should be provided with glass stoppers.

In addition to the foregoing, one of the most useful pieces of apparatus is a measuring cylinder, which is really a long tube with a foot and a spout, graduated throughout its length into cubic centimetres. One with a capacity of 100 c.c. will be constantly called for.

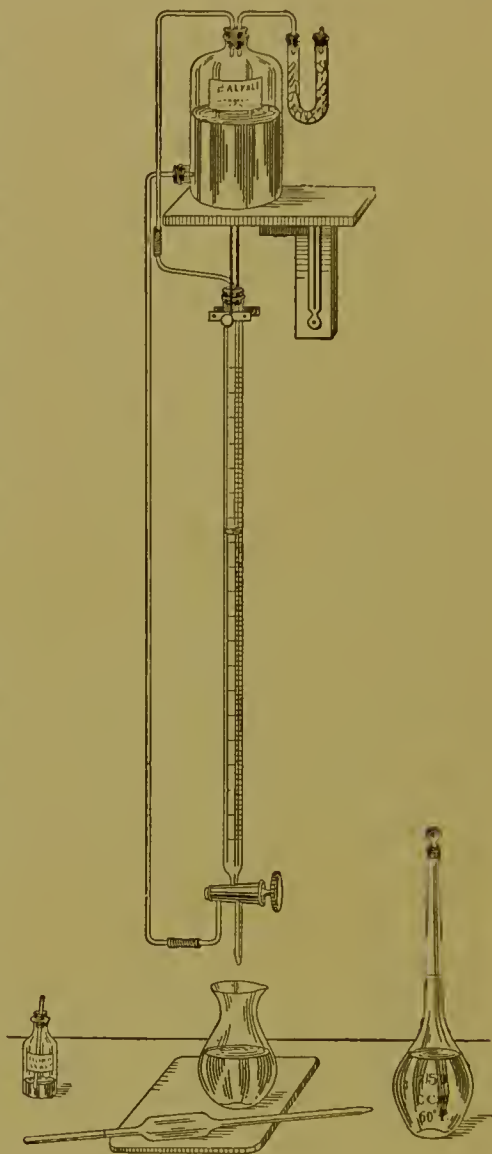


Fig. 250.—Burette

Other special graduated apparatus are also required for yeast-testing and flour-stability trials. The cylinders for testing the strength of flour have flat tops, and are generally known as gas jars. They should have a capacity of about 400 c.c., and should be graduated from the foot upwards to at least 350 c.c. (see fig. 6, Vol. I). For testing the volume of gas yielded by a sample of yeast a suitable

Yeast-testing
Cylinders.

apparatus is shown in fig. 8, p. 86, Vol. I. The baths required for this apparatus should be procured at the same time as the cylinder and bottles.

Next to yeast the baker depends very largely upon baking powder as an aerating agent, yet it is safe to say that no substances he uses are liable to more variation or grosser adul-

Testing
Baking
Powders.

teration than the many compounds marketed for this purpose. The fluctuations in gas-producing powers of many of these substances are so great that to this cause alone is doubtless to be ascribed many of the difficulties which occur when changes are made in the material used or fresh stocks purchased; yet bakers seldom think of testing their baking powders for strength. The process is quite simple, and should be capable of accomplishment by any practical man, especially as the only object sought is a comparison between similar materials and not an absolute figure. If it is desired, the gas apparatus shown at fig. 8, p. 86, Vol. I, can be adapted to this purpose, but a simpler and more elegant instrument can be devised with the burette and measuring cylinder, as is shown in the accompanying illustration (fig. 251). Essentially the apparatus consists of a 50-c.c. burette inverted in a cylinder of water so that it can be made to measure a volume of gas instead of

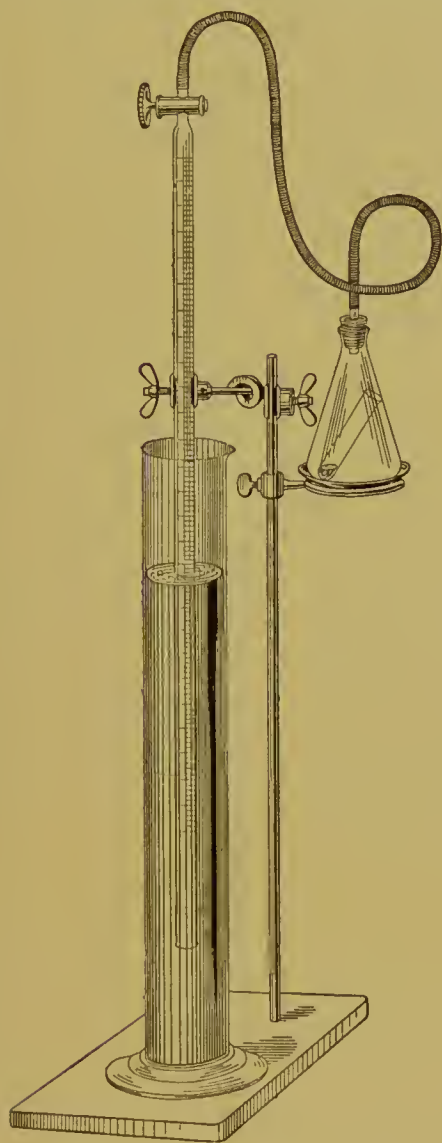


Fig. 251.—Gas-measuring Apparatus

liquid. There is a short, ungraduated space at the stopcock end of every burette, and the volume of this space must be determined once for all by filling to the bottom graduation with water and then running the water out into a measuring cylinder. This volume for a 50-c.c. burette will generally be found to be about 4 to 5 c.c., and it will have to be added to every gas reading taken. Fit the apparatus up exactly as shown in the figure, connecting the jet of the inverted burette by means of a piece of indiarubber tubing to a small Erlenmeyer flask provided with a rubber stopper having

a small piece of glass tubing passing through it. To use the apparatus, weigh out 1 gm. of the mixed baking powder and place it in the dry flask; then gently lower a small test tube containing about 10 c.c. of water into the flask, taking care not to spill any water on to the powder. Insert the stopper. By means of the rubber tube suck up water into the burette to just fill it completely, then close the stopcock, and attach the small flask. Make sure that your rubber joints are quite air-tight, by means of string ligatures if necessary; this is not required if the rubber tube fits the glass tube quite tightly. Open the stopcock so as to connect the burette with the flask, and then gently tilt the flask until the water runs out upon the powder. In some cases gas will be evolved immediately, and the water in the burette will begin to sink in consequence. Wait until the action ceases and then gently warm the flask so as to complete the reaction. With some powders considerable heat may be necessary to accomplish this end. When all the gas is evolved allow the apparatus to cool to the ordinary temperature again, and then note the gas volume in the burette. In order to do this accurately, it will be necessary to move the burette up or down until the level of liquid inside and outside is the same. The number of cubic centimetres of gas is ascertained by subtracting the reading at the water levels from 50 and adding the constant for the ungraduated portion. For the purposes of the practical baker this volume should be compared with that which would be yielded by an ideal cream-of-tartar baking powder. On reference to Vol. I, p. 241, an equation will be found which represents the reaction occurring between pure cream of tartar and sodium bicarbonate, and from it may be calculated the theoretical yield of carbon dioxide. When this is done it is found that about 16 per cent of the weight of mixed chemicals should be given off as gas. In practice, however, it is found that perfectly pure chemicals cannot be obtained, and 13 per cent of gas is a more correct figure to adopt as a standard. This figure, converted into gas volume, gives us 68 c.c. as the approximate volume, at 15° C. and 760 mm. barometric pressure, yielded from 1 gm. of mixed powder. This is sufficiently good for all working purposes to adopt as a standard to which the volume yielded by 1 gm. of any other powder can be referred, and the closer the volume approaches this figure the better the powder will be. Powders having much starch mixed in them will, of course, yield much lower figures than are quoted above.

When cream powders or cream of tartar are purchased separately to be mixed with sodium bicarbonate by the buyer, a different procedure is adopted to test the value of the acid agent. This consists

Testing Cream Powders. in weighing out a definite quantity of the powder, generally about 1 gm., and dissolving in distilled water in a beaker. A drop or two of phenolphthalein indicator is added to the solution, and then standard soda solution is run in until the colour of the solution becomes just permanently pink. The number of cubic centimetres of standard

soda solution required to accomplish this is ascertained, and from it the quantity of sodium hydrate neutralized can then be calculated. Every 40 parts of sodium hydrate neutralized represents 84 parts of sodium bicarbonate which is required to be mixed with the cream powder in order to utilize its gas-evolving power completely.

Perhaps one of the most useful things to know respecting foodstuffs

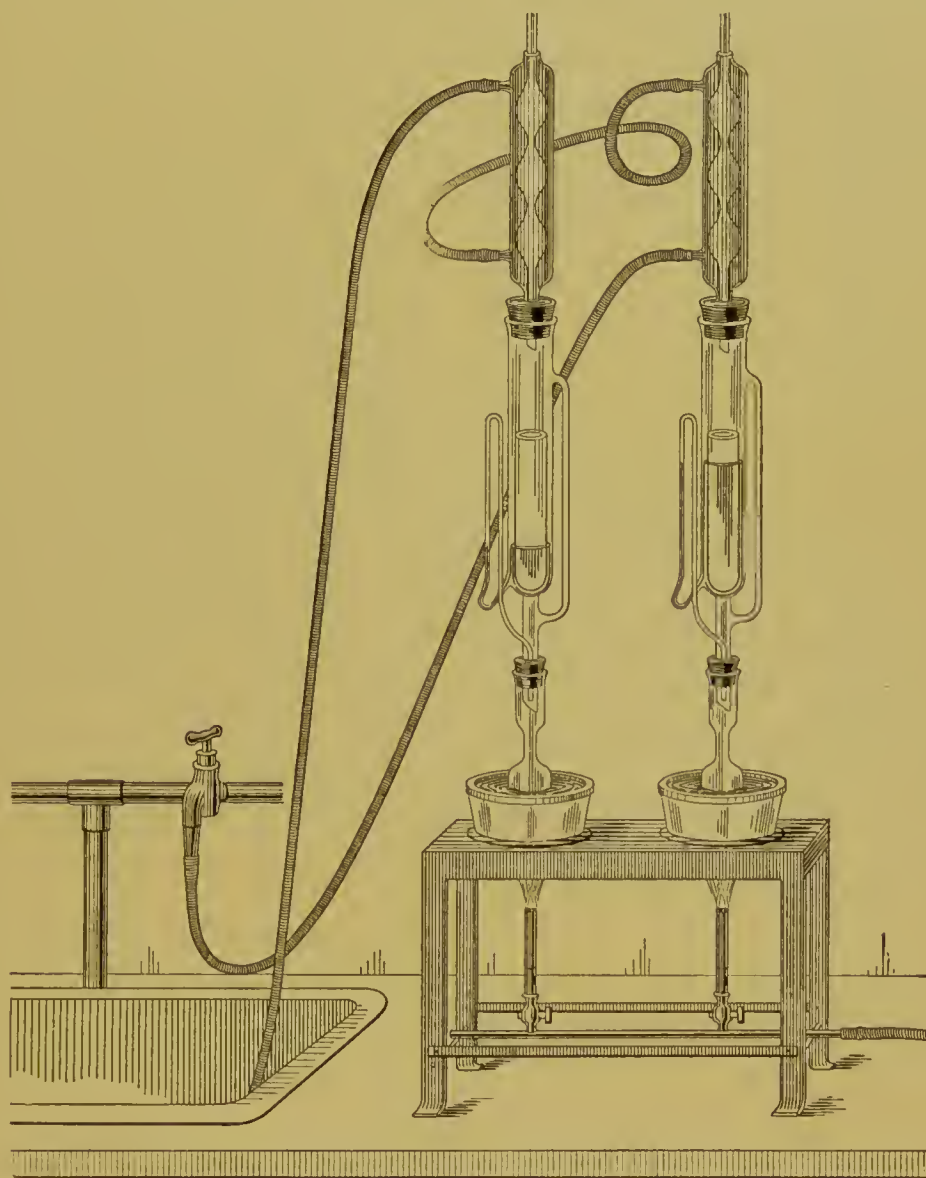


Fig. 252.—Soxhlet's Fat-extraction Apparatus

is the amount of fat contained in them. Not only is fat a most important constituent of our dietary, but, owing to its relatively high price compared with the other components of a food, it is also of considerable commercial importance to know how much is present in any given food. Among bakers its presence in bread often gives rise to the keenest of controversy, and it is therefore desirable to know how this very important yet modest compound can be detected and if

Determination
of Fat.

necessary determined. Although a great variety of special apparatus has been devised for the extraction of fats, they all depend upon the principle of treating the substance for examination with some volatile solvent capable of dissolving fats but no other substances from the material. The apparatus which has received the widest application is that of Soxhlet (fig. 252). It consists essentially of three parts: (1) a small flask which contains the solvent; (2) a specially designed extraction tube provided with siphon for automatically conveying the solvent and extracted fat back into the solvent flask, and also with a tube for conveying freshly distilled solvent on to the material for extraction; (3) a condenser to prevent escape of the solvent. In order to carry out the operation the material for extraction must be free from moisture, and therefore all materials should be carefully dried in the water oven before attempting to determine the fat. A weighed quantity (1 to 5 gm.) of the substance for examination is introduced into the extraction tube, seen in the middle of the illustration, the solvent flask is filled to the mark with dry ether, and the whole apparatus is then fitted together so tightly that ether cannot escape from the stoppers. The condenser is filled with water, which must be kept circulating during the whole of the process, so as to ensure complete condensation of the distilling ether. When all is complete the flask containing the solvent is heated gently in a water bath until the ether distils at a slow but regular pace. Allow the solvent to circulate through the extractor at least twelve times. Then remove the small flask, distil off the ether, dry in the water bath for about one hour at 100° C., and finally weigh. The increase in weight over the weight of the perfectly clean dry flask will be due to the fatty matter extracted from the material under examination, and the percentage can be found by simple proportional calculation. Although the method is quite simple in principle, still it requires great care and attention to the details for its successful application. There should, however, be no difficulty in obtaining good results if the work is carefully performed.

Next in commercial importance to fats as food constituents come the proteins. All these bodies contain nitrogen, the most familiar examples of the class being white of egg and gluten. The determination of proteins is now usually accomplished by Kjeldahl's Process, the simple and accurate method originally devised by Kjeldahl. The nitrogen is converted into an ammonium salt, and the amount of ammonia determined by simple volumetric methods. To carry out this process about 1 gm. of the substance is weighed out and placed in a long-necked hard-glass flask, 20 c.c. of concentrated sulphuric acid is added, and the mixture heated for one hour on a sand bath in the fume chamber. At the end of this time add 10 gm. of potassium sulphate, and continue heating over a naked flame until the black liquid becomes almost water-white. Allow to cool, and then add 200 c.c. of distilled water, transfer to a large distilling flask, and add a slight excess of caustic soda. Connect to a vertical Liebig condenser, and distil over

about 150 c.c. into a receiver containing 50 c.c. of standard sulphuric acid. The distilling apparatus is shown in fig. 253. When the distillation is finished, transfer the distillate to a graduated measuring flask (250 c.c.) and make the volume up to the mark. This solution is next titrated with standard caustic soda solu-

tion. If $\frac{N}{10}$ solutions are

employed for the sulphuric acid and caustic soda solutions, then 1 c.c. soda is equivalent to 1 c.c. acid. Find the number of cubic centimetres of soda required to neutralize the 250 c.c. of distillate, and this number will represent the number of cubic centimetres of sulphuric acid remaining uncombined of the 50 c.c. originally taken. Subtract from 50, and the number remaining will be the cubic centimetres of acid which have combined with ammonia liberated from the material under test. Since

we are using $\frac{N}{10}$ solutions, then the cubic centimetres of acid neutralized will be equal to the same number

of cubic centimetres of $\frac{N}{10}$

ammonia solution, each cubic centimetre of which will contain .0017 gm. of

ammonia gas or .0014 gm. of nitrogen. By multiplying the cubic centimetres of $\frac{N}{10}$ acid absorbed by .0014, therefore, the amount of nitrogen in

the weighed quantity of material originally taken is found. To convert this nitrogen into proteins it is usual to multiply the weight by the factor 6.25, since it is found that the amount of nitrogen in proteins of all kinds averages 16 per cent. There is no great difficulty in carrying out Kjeldahl's process; and though at first it may seem complicated, yet in practice it will be found quite easily and rapidly performed. It also has the advantage of yielding very reliable results.

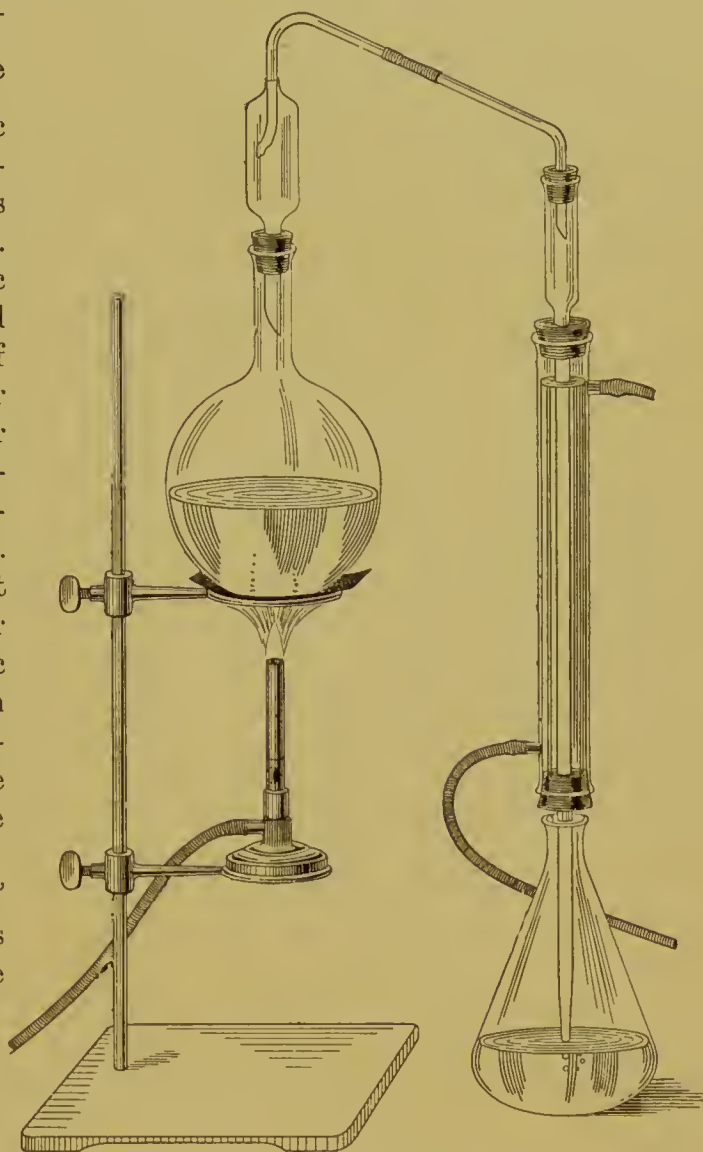


Fig. 253.—Condensing Apparatus

The carbohydrates cannot all be determined by any single process, though frequently results were given in the past in which all were determined as dextrose after conversion by means of acid. This system of recording results is now almost abandoned. For sugars the best mode of determination is by means of Fehling's solution (see p. 378).

Fehling's Solution for Sugars. This solution, when acted upon by most sugars, on heating throws down a precipitate of cuprous hydrate, the quantity of which is proportional to the amount of sugar present and its specific nature. There are two principal modes of using Fehling's solution, viz. gravimetric and volumetric. Both methods have their advocates, but perhaps the gravimetric requires the smaller amount of specialized training for its successful application. A solution containing not more than 2 gm. per cent of the sugar for examination is made. Measure out into a beaker equal volumes of each of the Fehling solution constituents sufficient to make about 30 c.c., place in a boiling-water bath for a few minutes, and note whether any reduction takes place. If there is any, it must be determined, and a correction applied to every test made with the solutions. If there is no precipitate, add a known volume of the sugar solution and replace in the water bath for twelve minutes. Remove and filter off the red precipitate through a small tough filter. Wash with hot distilled water until the filter paper is quite free from green colour, and the wash water is no longer alkaline. Then dry the filter paper. Burn in a crucible, and weigh the residue of copper oxide obtained, deducting the weight of the filter ash. From the volume of solution required to yield the observed weight of copper oxide find the amount of oxide to which the whole solution is equal, and by reference to the following figures it will be possible to find how much of the following sugars this represents. It has been found that

| | | |
|---------------|---------|----------------|
| 1 gm. maltose | reduces | 1.345 gm. CuO. |
| 1 „ lactose | „ | 1.680 „ |
| 1 „ dextrose | „ | 2.205 „ |

In carrying out this process care must be taken that the whole of the Fehling's solution is not reduced. This is guarded against by noting that the solution is still deep-blue after reduction is complete. If this is not the case, and the solution is green or yellow, reject the test and make another, adding a proportionally smaller quantity of sugar solution.

It is not possible to test cane sugar or starch by this method. Cane sugar, however, is readily converted into dextrose by means of dilute acid, after which it may be tested as above. Starch is converted into glucose by prolonged heating with acids, and, after neutralizing the acid, may be tested with Fehling's solution. It is more often the rule, however, to determine all other carbohydrates directly as above, and then to take starch as constituting the difference. Mixtures of sugars cannot, of course, be determined by the simple process outlined above, and reference must be made to works dealing with sugar analysis for the many methods adopted in such cases.

The determination of mineral matter or ash is a matter of some importance, since it is frequently possible to gain some information as to the grade of a flour from the amount of ash obtained by incineration, whilst the presence of mineral adulterants can always be detected by this means. A muffle furnace is the best apparatus for burning off the organic matter, because no loss of volatile ash is likely to occur. The operation can be performed in the open air by means of a Bunsen burner if the muffle is not at hand, but it is productive of much fume, and the charcoal formed often requires very prolonged heating for its complete combustion. The material to the extent of about 5 gm. should be weighed into a platinum dish for preference, but a nickel or even a porcelain dish can be used. The dish and contents are then heated to bright redness until only a white ash remains. On weighing the dish after cooling, the increase over the weight of the empty dish is due to ash; and since 5 gm. had been taken for the test, it will only be necessary to multiply by twenty in order to obtain the percentage of ash.

All food materials contain a greater or less amount of moisture, and since the value depends entirely upon the dry matters present it is very important to know how much of this water exists in any given sample. For instance, the moisture of flour may legitimately vary between 11 and 14 per cent, and this means that the moist flour contains 8·4 lb. more water per sack than the dry one. The influence of this moisture on the water-absorbing property of a flour will be readily appreciated. For the determination of moisture it is only necessary to weigh out 5 gm. of the material into a weighed watch-glass or small dish. Place in the water oven for six hours, keeping the water in the oven gently boiling all the time. Then remove, cool in a desiccator, and weigh. The loss in weight multiplied by twenty will give the percentage of moisture.

The following stock reagents will be sufficient for all ordinary purposes in the bakery testing room:—

List of Reagents.

| | |
|--------------------------------|------------------------------------|
| Sulphuric acid, pure, 1 lb. | Ammonie oxalate, 4 oz. |
| Hydrochloric acid, pure, 1 lb. | „ chloride, 1 lb. |
| Nitric acid, pure, 1 lb. | „ carbonate, 1 lb. |
| Ammonie hydrate, pure, 1 lb. | „ molybdate, 2 oz. |
| Sodic hydrate, pure, 2 lb. | Iodine, 1 oz. |
| Alcohol, methylated, 2 lb. | Potassic iodide, 4 oz. |
| Ether, methylated, 1 lb. | Silver nitrate, 1 oz. |
| Chloroform, $\frac{1}{4}$ lb. | Baric chloride, 1 oz. |
| Copper sulphate, 1 lb. | Methyl orange, $\frac{1}{2}$ oz. |
| Rochelle salts, 1 lb. | Phenolphthalein, $\frac{1}{2}$ oz. |
| Potassic sulphate, 1 lb. | Potassic ferrocyanide, 4 oz. |
| Logwood chips, 4 oz. | Methyl violet, $\frac{1}{2}$ oz. |
| Acetic acid, 1 lb. | |

This list will, of course, need to be augmented as requirements arise. A sufficiency of distilled water should always be at hand, for all chemical

tests require to be made with distilled water. Working solutions must be made from the concentrated chemicals received from the dealers. Dilute acids are made by mixing 1 volume of concentrated acid with 4 volumes of distilled water. Care must be exercised in diluting sulphuric acid always to add the acid to the water, and not vice versa; stir constantly. Dilute ammonia is made by mixing 1 volume of .880 ammoniac hydrate solution with 3 volumes of water. The solid chemicals may be conveniently dissolved in distilled water in the proportion of 5 parts in 100 of water. There are a few exceptions, which will be noted in the section devoted to special reagents.

One of the most useful methods of quantitative analysis consists in the use of dilute solutions containing definitely known weights of active chemical reagent in a fixed volume. If a solution is made of such strength that its chemical activity is equivalent to that of 1 atom of hydrogen, then it is called a normal solution, usually written N. So also if the strength is equal to $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{2}$ that of 1 hydrogen atom, then the solution is $\frac{N}{5}$, $\frac{N}{10}$, or $\frac{N}{2}$ respectively. In food chemistry two solutions of $\frac{N}{10}$ strength are capable of such wide application, that short directions for their preparation are here given. Should other solutions be required, a manual of volumetric analysis must be consulted for details of preparation.

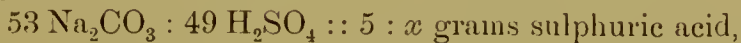
For N sulphuric acid measure out about 30 c.c. of pure sulphuric acid (sp. gr. 1.84) into a thin beaker, and dilute with distilled water to about 900 c.c. This is best done by pouring the acid in a thin stream into the beaker nearly filled with water. Cool thoroughly, and transfer to a litre flask. When cold, make the volume exact with water. This would, if the acid were perfectly pure, give a solution a little stronger than normal. It is necessary, however, to ascertain exactly the strength of the solution. The process is as follows. Weigh out 5 gm. of recently ignited sodium carbonate and dissolve in 100 c.c. of distilled water, making the volume exact in the 100-c.c. measuring flask. Fill a burette with the acid solution for testing, and into a beaker place 20 c.c. of the soda solution, adding a couple of drops of methyl orange. Carefully read the volume of acid in the burette, and then run in the acid solution on to the soda solution until the yellow colour is just permanently changed to red. This indicates that the soda has been neutralized by the acid used. From the following equation,



it can be calculated that 53 parts of the alkali sodium carbonate just neutralize 49 of sulphuric acid, and these figures, in conjunction with the observed quantity of acid required to neutralize exactly the whole of the sodium carbonate originally weighed out, will form the basis upon which a calculation of the standard strength of the acid can be built. For example:

By experiment it was found that 20 c.c. of a 5-per-cent solution of sodic carbonate required 18.5 c.c. of the prepared sulphuric acid for its neutralization. Therefore 100 c.c., *i.e.* 5 gm. of sodic carbonate, require $18.5 \times 5 = 92.5$ c.c. sulphuric acid.

Now since



that is $\frac{49 \times 5}{53} = 4.245$ gm. in 92.5 c.c.;

therefore 1 c.c. contains $\frac{4.245}{92.5} = .0497$ gm.

The solution is therefore a trifle over exact normal strength, and requires the addition of 14 c.c. to each 1000 c.c. to reduce it to the true standard. Ascertain this strength with the utmost care, for it is upon the standard sulphuric acid that reliance is placed in testing all other solutions. If the solution is too strong, it must be further diluted; if too weak, it must be fortified. When the strength has been accurately ascertained, the solution must be put into a clean Winchester and labelled with the strength. If the solution is required $\frac{N}{10}$, as being the best strength for all-round purposes, then it must be diluted as occasion requires, until 1 c.c. of the acid solution contains just .0049 gm. of acid. To prepare $\frac{N}{10}$ from N solutions, take 100 c.c. and make up to 1000 with distilled water.

For the preparation of N sodium hydrate, weigh out 40 gm. of pure sticks of sodic hydrate; dissolve, and make to 1 litre. Test against the N sulphuric acid already made. From the formula



we obtain the ratios of the reagents, and 1 c.c. of N sodium hydrate should contain .04 gm. of soda. Label carefully, and verify the results occasionally, making any alteration that may be found necessary owing to evaporation. Prepare $\frac{N}{10}$ solutions from the standard by diluting 100 c.c. distilled water to 1000 c.c. as in the case of sulphuric acid.

For volumetric work with acids and alkalies it is necessary to have certain coloured solutions which, by undergoing a sudden change in colour, can be made to serve as an index of the required action being complete. Two of the many substances suitable for this purpose will suffice for all ordinary purposes.

Dissolve .1 gm. of dry methyl orange in 100 c.c. of distilled water. One drop of this solution will be sufficient to add to 100 c.c. of any liquid to be tested. In acid solutions this indicator is pink to red according to the density, and upon becoming alkaline it changes to yellow. It may be used in cold solutions for all mineral

acids generally used, nitrous acid excepted, and for the alkalies, including ammonia. It is not reliable for organic acids.

Dissolve 1 gm. of dry phenolphthalein in 100 c.c. of 50-per-cent alcohol. This indicator is perfectly colourless in acid solutions, but becomes deep crimson immediately the solution turns faintly alkaline. **Phenolphthalein.** The indicator is excellent for the organic acids, but is of no use for ammonia.

The following are directions for the preparation of Fehling's solution. Weigh out 69.28 gm. of pure crystallized copper sulphate, and dissolve in 1 litre of water. Add 1 c.c. of concentrated sulphuric acid. **Fehling's Solution for Sugar-testing.** Place the solution in a clean Winchester quart, and label: **FEHLING'S SOLUTION I.** Dissolve 350 gm. Rochelle salts in 700 c.c. of water, and filter if necessary. In another 200 c.c. of water dissolve 100 gm. of caustic soda. Mix the two solutions together, cool, and make up to exactly 1 litre. Place in a clean Winchester, and label: **FEHLING'S SOLUTION II.** For use, equal quantities of I and II are taken and mixed together when required. The mixed solution should contain .0346 gm. of copper sulphate in each cubic centimetre, and this when completely reduced is equivalent to .005 gm. of anhydrous grape sugar.

Dissolve about 20 gm. of potassium iodide in a small quantity of distilled water and place in a stoppered bottle. Then add about 5 gm. of iodine crystals, and shake occasionally until the liquid becomes almost black. For use, decant a portion of the dark-red solution into a bottle and dilute until it has a pale port-wine tint. **Iodine Solution for Testing for Starch in Yeast, &c.**

Digest 10 gm. of logwood chips in about 100 c.c. of alcohol; decant off the clear solution and keep in a stoppered bottle. A saturated solution of ammonium carbonate is also required; the ordinary bench reagent will do for this. The logwood tincture should be fresh, therefore large quantities should not be prepared at a time. To apply this test, weigh out 20 gm. of the flour for testing and make into a thin dough with an equal weight of water. To this add 1 c.c. of logwood tincture and 1 c.c. of ammonium carbonate; mix thoroughly. Spread out upon a white tile or piece of white paper and dry gently. If the layer dries with a blue or violet colour, alum is present. Pure flour dries to a light-pink colour. For the purpose of estimating the quantity of alum present, comparisons should be made against samples of pure flour to which varying amounts of alum have been previously added. When the suspected flour matches the colour yielded by that of a known weight of alum a fair measure of the extent of adulteration is obtained. **Logwood Solution for Alum Tests.**

When nitrous oxides have been used, it is easy to detect the treated flour by means of the Griess-Illosvay reagent. To prepare this solution, dissolve .5 gm. of sulphanilic acid in 150 c.c. acetic acid. Then dissolve .1 gm. *α*-naphthylamine in 20 c.c. boiling water, and pour off from any blue oily residue. Mix the two solutions, and if any pink colour appears, add a trace of zinc dust until it is destroyed. **Tests for Bleached Flour.**

and the liquid is colourless. When about 1 c.c. of this solution is added to a bleached flour suspended in water, a pink colour appears which is permanent for several hours. When chlorine or bromine is used as a bleaching agent, it is detected by extracting the flour with benzol. Evaporate the solution until only an oily residue remains. If the oil is colourless or nearly so, the flour is probably bleached. Moisten a platinum wire loop containing a fragment of copper oxide in the oily fluid, and hold in the Bunsen flame. A green flame will indicate the presence of chlorine or bromine bleaching agents. If the copper oxide yields no green flame, these agents have not been used.

Mineral adulterants in flour may be detected by ashing a sample, when an abnormally large ash will point to mineral matter added. Another test which is fairly reliable is to treat about 10 gm. of the flour with 25 c.c. of chloroform in a large test tube, shaking thoroughly. Then allow to stand for a few minutes. If mineral matters have been added, they will be found as a precipitate at the bottom of the tube, whilst the flour will be on the top of the chloroform. This test makes use of the different specific gravities of flour and its possible mineral adulterants.

Digest about 20 gm. of the flour with 70 per cent alcohol containing 5 per cent hydrochloric acid. Allow to stand one hour and then examine the clear solution. A perfectly colourless solution is obtained from pure wheaten flour. Blood-red colour is yielded by wheaten flour containing ergot, and purple-red if mildewed. Yellow colour is due to barley or oats, and orange-yellow to pea flour.

Stain a portion of the flour with methyl violet. Smear a trace on a microscope slide and put on a cover glass. Examine with $\frac{1}{4}$ -in. or $\frac{1}{8}$ -in. objective. Any starch grains which have been damaged either by sprouting of the wheat, mildew, ergot, or even by excessively high pressure in the mill rolls, will be stained deep blue, whilst the sound starch will remain colourless. The reagent is prepared by digesting 1 gm. of methyl violet in about 50 c.c. of absolute alcohol until the solution is saturated. Then take 11 c.c. and add 100 c.c. of distilled water. This stain can also be used for examining flour or bread for yeast and bacteria. The organisms take up the dye and become quite distinct when viewed with the $\frac{1}{8}$ -in. or $\frac{1}{12}$ -in. objective. It is necessary, however, to first ensure that the organisms are dead, as when living they do not take stains. To do this, mix a little of the bread or flour with a few drops of water in a watch-glass. Transfer a drop of the liquid to a microscope slide and spread it out in the form of a smear. Allow to dry in the air, and then quickly pass the slide through the flame of a Bunsen three or four times. Next place a few drops of the stain upon the smear and leave in contact ten minutes, pour off, and wash once or twice in water. Place a cover glass over the stained preparation, and examine with $\frac{1}{8}$ -in. lens if yeasts are being sought for, or $\frac{1}{12}$ -in. oil immersion for bacteria.

Mineral Adulterants in Flour.

Vogel's Test for Unsound Flour.

Detection of Sprouted Wheat, &c.

The following is a list of fittings and apparatus for the testing room, with prices:—

| | £ | s. | d. |
|--|---|----|----|
| 1 chemical wall bench, 7 ft. by 1 ft. 9 in. by 3 ft., with teak top, 2 cupboards, and 4 drawers | 4 | 4 | 0 |
| 2 two-way gas taps | 0 | 5 | 0 |
| 1 three-way water tap | 0 | 11 | 3 |
| Gas and water pipes for connections (about) | 0 | 15 | 0 |
| 1 white enamelled sink, 30 in. by 14 in. by 10 in. | 0 | 16 | 9 |
| 1 acid receiver of earthenware | 0 | 10 | 3 |
| 1 downpipe for above | | | |
| 1 set of bottle shelves | 0 | 6 | 9 |
| 1 laboratory stool | 0 | 9 | 6 |
| 1 drawing board with pegs | 0 | 10 | 9 |
| 1 bracket shelf for balance | 0 | 16 | 0 |
| 1 balance, 100 gm. | 1 | 8 | 6 |
| 1 glass case for above, with sliding door | 0 | 10 | 0 |
| 1 set of weights, 50 gm. | 0 | 5 | 0 |
| 1 doz. watch-glasses, 2 in. | 0 | 0 | 7 |
| 1 camel-hair brush | 0 | 0 | 2 |
| 3 pieces of wire gauze, 6 in. | 0 | 0 | 6 |
| 3 Bunsen burners with roses | 0 | 4 | 6 |
| 3 yd. indiarubber tubing (best), $\frac{5}{16}$ in. | 0 | 4 | 6 |
| 2 tripod stands, 20 cm. | 0 | 1 | 4 |
| 1 retort stand with rings 20 in. | 0 | 3 | 3 |
| 2 clamps and bosses | 0 | 5 | 0 |
| 2 burettes, 50 c.c. in $\frac{1}{10}$ | 0 | 7 | 3 |
| 1 burette stand for two | 0 | 2 | 0 |
| 1 doz. assorted flasks | 0 | 5 | 0 |
| $\frac{1}{2}$ doz. flasks, 250 c.c. | 0 | 2 | 0 |
| 1 doz. N.M. reagent bottles, 175 c.c. | 0 | 3 | 0 |
| $\frac{1}{2}$ „ W.M. „ 125 „ | 0 | 3 | 3 |
| 100 blank labels | 0 | 0 | 3 |
| $\frac{1}{4}$ doz. pipettes, 1 c.c. | 0 | 0 | 6 |
| 1 water oven with gauge tube-stand, 20 by 20 by 20 cm. | 1 | 8 | 0 |
| 1 burner for above | 0 | 1 | 3 |
| 100 filters, No. 204, 15 cm. | 0 | 0 | 6 |
| 1 doz. each red and blue litmus books | 0 | 2 | 0 |
| 2 thermometers, 400° F. | 0 | 4 | 6 |
| 2 „ in metal case, 20 cm. | 0 | 3 | 0 |
| $\frac{1}{4}$ doz. basins, No. 1 | 0 | 1 | 0 |
| $\frac{1}{4}$ „ funnels, 15 c.c. rib | 0 | 1 | 3 |
| $\frac{1}{2}$ „ „ 9 „ | 0 | 1 | 3 |
| $\frac{1}{2}$ „ yeast flasks, 100 c.c. | 0 | 3 | 0 |
| 2 measures, 18 cc. | 0 | 1 | 0 |
| 1 „ 100 cc. | 0 | 1 | 2 |
| 1 „ 250 cc. | 0 | 1 | 7 |
| 1 lb. glass tubing (assorted) | 0 | 0 | 10 |
| 1 spatula, 18 cm. | 0 | 0 | 7 |
| $\frac{1}{4}$ doz. crucibles and covers, No. 00 | 0 | 0 | 8 |
| 1 pair of tongs, 7 in. | 0 | 1 | 0 |
| 1 doz. assorted rubber corks | 0 | 2 | 6 |
| 3 „ „ corks | 0 | 1 | 0 |
| 1 set of six corkborers | 0 | 1 | 6 |
| 3 yd. connection tubing, $\frac{3}{16}$ in. | 0 | 3 | 0 |
| 1 Davies condenser, 15 cm. | 0 | 4 | 6 |

| | £ | s. | d. |
|---|---|----|----|
| 2 Soxhlets | 0 | 6 | 0 |
| Chemicals and standard solutions (about) | 1 | 0 | 0 |
| 1 special gas-collecting set, including troughs, graduated jars, bottles, &c., complete as used at the National Bakery School, London | 1 | 1 | 0 |

CHAPTER LVII

THE BAKERY STAFF

One of the very frequent questions asked by master bakers is, "How many men should be required to do a certain quantity of work?" When all was hand work the answer to such a question was not very difficult, but the employment of machinery has considerably complicated the calculation, and in large bakeries now, where the manipulation of the dough is more or less automatic, the output per man is determined wholly by the number and kind of the machines employed. The matter is further complicated by the variations in the kind of work which constitutes the usual list of a mixed business. Thus it is uncommon to find a small business in which nothing but bread is made; there are generally a few items that belong to what are called small goods, and these necessarily take more time, because more labour, than bread. Assuming that one man is employed making bread alone by hand, he would be fully employed doing about seven sacks per week; and if amongst that he had about £2, 10s. to £3 worth of small bread, then six sacks per week would probably be sufficient. If two men were employed, the joint output might be eighteen to twenty sacks per week, according to kind and size of bread, while three men might do thirty to thirty-two sacks (280 lb.). It may be assumed that with a trade of thirty sacks or upwards a dough machine at least might be employed, although in such a small trade it would be unlikely to save the wages of even one man. It should, however, increase the quantity of bread per man. In a large machine bakery employing only dough-making machines the output might be two and a half sacks per day of ten working hours for each man, the half-sack representing the toll for the machine, so that it may be assumed that the machinery power, &c., in this case takes the wages of every fifth man, or, in other words, that while five men would be employed for a bread trade of fifty-four sacks per week without machinery, four men should be sufficient for the same amount of work if the machines mentioned are employed. The saving of one man is not so readily effected on a trade of fifty sacks as the saving of two on a trade of one hundred or of three on a trade of one hundred and fifty; while with bigger trades the saving may be slightly more, owing to the possibility

One Man's
Work per
Week.

Saving of Labour
in Machine Bakery.

of effecting economy by the better classification and subdivision of the work.

It is extremely difficult to say what the output per man is or should be in a bakery fitted with a modern automatic plant, including dividers, moulders, and provers, but the writer has been informed that thirty sacks per man can be done in a working week of fifty hours. With strict and careful organization a smaller run of machines, but including an automatic divider and moulder, has enabled each man in a factory to produce bread

Large Output from no less than twenty-one sacks of flour per week.
in Fully-equipped It is important to note the influence this matter of
Bakery. output has on the gross profit to be obtained from the

bread, and how it affects the possibilities of competition. Thus, if we assume an average wage for the baker of 28s. per week, the cost of labour of manufacture on a seven-sack trade would be 4s. per sack; on a fifty-sack trade it would be a little over 2s. 9½d. if the bread were

Cost per Sack made by hand, but if made by machinery it would be
for Baker's slightly under 2s. 3d. per sack. On the twenty-one-sack-
Labour. per-man basis the bakers'-labour charge would be reduced

to under 1s. 3½d. per sack, while thirty sacks per man would make the charge only a little over 11d. per sack. It appears, therefore, that the factory proprietor has an advantage by the use of complete machinery of nearly a halfpenny per 4-lb. loaf over the baker in a small way of business, but this advantage is more apparent than real, for the wages bill is reduced so far only as the bakers are concerned, to be partly increased in paying for power, machine attendants, &c., although, by the use of electric motors or gas engines, these items are not so formidable as they once were, and the small machine bakery has probably a greater advantage in the use of its machinery over the large machine bakery than the figures given above seem to indicate. In any case, it has been pointed out before that what the very large bakery saves in cost of manufacture it is in ordinary circumstances liable to lose again in expenses of distribution.

For arriving at a basis for calculating the cost of the work in a mixed trade, it is necessary to settle what rate should be allowed for certain kinds of goods that are usually classed together. The bread output is invariably calculated in sacks of flour, while smalls and confectionery are generally given in cash values. The same rule holds with regard to confectionery as stated for bread, that one man working alone

Economy of has a smaller capacity than the output per head for a
Joint Labour. number of men working together. The quantity of work

of each kind to be done also determines the total per man, because a great deal of the time taken is in weighing up materials, and large quantities take little more trouble than small, while many little lots take much more time than one or two big lots of the same money value. The nature of the work has also a great deal to do with the quantity produced. For these reasons, the man working single-handed is at a great

disadvantage as compared with another working jointly in a gang, and two or three men working jointly are at a disadvantage, as far as quantity of work is concerned, as compared with those working in a factory where large quantities of each separate kind of work are done, and an economical division of labour can be arranged.

It may be assumed that when the small-goods trade gets up to or above £15 per week, it will be profitable to employ men to do the work apart from the bread bakers; but as the latter are usually charged with the duty of making what are called morning goods—rolls, buns, &c.—one man should be able to manage this amount of work. After deducting the goods just specified, that would leave an average of about £2 worth per day for the man. In some sorts of plain smalls this is not an excessive output, as a man might easily be able to produce £2, 10s. worth, especially if any considerable part of it consists of cake. The assumption is, of course, that the day is one of ten working hours only.

In a factory where the work is divided into departments, each of which employs three, four, or more men at work of a like kind and in large quantities, the output per man is very much more. Thus, in such a factory, of which the writer has intimate knowledge, and where machinery is employed for all operations for which it has been designed, the following is roughly the output per man at the different departments, porters being reckoned as well as the skilled workmen:—Buns, scones, &c., about £4 per man—four men being employed at this work; pies, fruit tarts, and such work, about £3, 10s. per man—pies and tarts being mostly of 1*d.* and 2*d.* sizes; cakes, including slabs, about £6 per man, but the work of the department including a quantity of 1*d.* cakes; sponge and meringue goods, including cream buns, éclairs, &c., about £3 per man; paste goods and 1*d.* articles with paste and filling, about £3, 10s. per man; hot-plate scones, drop scones, &c., mostly halfpenny goods, about £2, 10s. per man; small fancies, mostly penny fondant, masked and decorated, about £2 per man. This rate must not be considered absolute for even the kind of work specified, as it is quite unlikely that the proportion of work of any particular sort is the same compared with the other work in any two factories, but the figures given may be used as a serviceable basis from which to ascertain whether the work turned out in a particular case is nearly what it might be. It may be stated that the average for the whole factory mentioned is roughly £3, 15s. per man per day of ten hours.

It must be noted that the output per man is likely to vary from week to week if the whole staff is permanent. A wet day may make a great difference in the demand for small goods and pastries, while the fruit season may reduce the demand very considerably for a lengthened period; yet it may be inconvenient to reduce the staff, and in the small-goods department it is not so convenient to

Factory
Advantages.

Profitable
Employment of
Confectioner.

Output of
Smalls per
Man.

Cost for Labour
on Different Goods.

Average Output
in Factory.

Causes of
Variations
in Output.

increase or reduce the staff for the quantity of work as it is in the bread department. The latter varies also with variations in the weather, with the seasons, and with the scarcity or otherwise of vegetables. The small baker makes little or no effort to meet the changing demand by reducing or increasing the staff, and in consequence may have a very considerable marginal loss on labour. The factories, on the other hand, prevent this loss as far as possible by keeping the permanent staff only large enough to meet the requirements of the smallest day's work in the week, and augment the staff from day to day with casual labour as needed. It is, of course, only possible to do this in the large towns, where casual labour in the trade is available; in other places the rule is to let the workers take the rough with the smooth; to work a little longer when there is much to do, in the hope of getting finished earlier when the day's work is small.

The work of the bakery, whether bread or confectionery, does not, however, depend wholly on the number of men employed, but very much on the qualities of the foreman. If this man knows his business thoroughly, and has confidence in himself, and takes pains to organize the work so that each man does his fair share, and does it in such a way as to fit in with the work of the others, so that there is little waiting and little waste of energy, then the quantity of work per man will be increased and the work will be all the easier for the men.

The value of the foreman baker does not always depend on his own skill as a tradesman. This quality is, of course, of the very highest importance when the foreman has only one or two men to control and has all the important operations to perform himself; but in a bigger bakery, especially in one with a full plant of machinery, the foreman need not—indeed, should not—then be tied down to any special work at all, but should be free to organize and to direct the operations of the other men, and it is then that his ability as a disciplinarian and organizer comes into play far more than his skill as a workman, although he can only have that necessary confidence in himself and his own judgment which is essential in a good foreman if he is also an efficient workman. This point is not falsified by the fact that very capable foremen have on occasions been men who did not serve their apprenticeship at the business, for their efficiency is the result generally of their having learned the little bit they needed very thoroughly, and of their having naturally that self-confidence and organizing faculty which enable them properly to control the men. Not infrequently men who are very good workmen make indifferent and unsatisfactory foremen, because of their want of the masterful spirit and their constant tendency to be directed out of the course they know to be the right one by the suggestions of the men under them. A foreman of this sort gets poor results, because the men are prone rather to make things easy for themselves, since they have no responsibility, than to do what is best for the work if difficult for themselves.

The greatest economy is obtained by a judicious division of the work, so that each man is employed at the same work at the same time day by day. This makes for expertness in the men. Foremen bakers, as a rule, do not deliberately attempt to set out the course of the work and each man's duties hour by hour, yet this is an excellent expedient for securing regularity, and when the whole of the work is before the eye on paper, it is possible to keep altering the routine little by little until something like perfection is obtained. A time sheet drawn up in this way may be to the foreman what a "flow sheet" is to the head miller in a flour mill. It is not

Value of
Scheme of
Work.

TIME SHEET FOR COURSE OF WORK FOR ONE DAY WITH A TRADE OF £8 IN MIXED SMALL GOODS AND 14 SACKS BREAD

| Time. | Foreman. | 2nd Hand. |
|------------|---|---|
| 1st hour. | Plies water for dough. Mixes yeast and flour into small ferment. Makes bun ferment. | Attends to furnace. Makes dough. Makes brown bread. |
| 2nd hour. | Seales materials for seones. Seales brown bread and moulds. Weighs seones, &c. | Makes seone dough. Makes bun dough. Cleans tins. Helps with seones. |
| 3rd hour. | Bakes seones. Weighs materials for 2nd dough. Bakes buns. | Moulds buns. Cuts baek dough. Packs buns. |
| 4th hour. | Half-hour meal. Throw out dough. Seale and hand up. | Half-hour meal. Pitch trough. Make dough. |
| 5th hour. | Mould. Set bread. | Mould. Hand on. |
| 6th hour. | Weighs materials for sponge goods, cakes, &c. Draw batch. | Prepare moulds, tins, &c. Cut back dough. Carry away and pack bread. |
| 7th hour. | Dinner hour. | Dinner hour. |
| 8th hour. | Throw out dough. Seale and hand up. Mould. | Prepare tins. Seale and hand up. Mould. |
| 9th hour. | Set batch. Make small goods, cakes, &c. | Hand on. Assist with small goods. |
| 10th hour. | Draw batch. Bake small goods. Finish small goods. | Carry away. Assist with baking and carry away. |
| 11th hour. | Pitch trough for next day. Weigh salt and yeast food for batch. Make up produce book. | Clean troughs and tables. Clear furnace and take away ashes. Clear up bakery. |

possible to anticipate all the possible combinations of work that might arise and prepare a time sheet for them, nor is it wise even to draw up such a sheet from calculations only, then to attempt to bind the men to the times set out on it. The time sheet should rather be compiled from the actual work of the bakery on average days, and as the result of direct observations on the work and the time taken for each operation than based on purely theoretical calculations; then, without slavishly following the table times, it serves as a guide for the work afterwards, and the men endeavour to act up to it.

If not quite impossible, it is at least extremely difficult to make out a general time table that can be strictly applied to all or even to many bakeries. Each really requires a special table of its own: a slight difference in the kind or size of bread or other goods made, or the different proportions of the various sorts produced, may readily confuse a time table set out for other conditions. These difficulties are perhaps more pronounced in connection with confectionery than in relation to bread, but there are certain well-established rules that are true to a greater or less extent for all bakeries. Thus if one man is making a rather slack dough of one sack (or six-bushel size), such as used for tin bread or, say, for Scotch bread, then the task should occupy about twenty minutes; while half an hour would be the time allowance if the dough is much stiffer, and forty minutes if a straight dough for English cottage loaves to stand overnight. To set a sack batch in the oven with a peel may take a little over ten minutes, if the loaves are set two at once and are "handed on" by a man other than the setter. If the latter has to lift the loaves from the table himself on to the peel, the setting may then require fifteen minutes or longer. To draw a sack batch and carry the loaves from the oven to the bread room or the shop will occupy two men from fifteen to twenty minutes. In baking a sack batch of crusty bread the allowance on the time table should not be less than forty-five minutes, but if the bread were of the English or Irish crumby sort, then one hour to one and a quarter would be necessary, while a batch of the Scotch type would take from one and three-quarters to two hours. In preparing a time sheet it is not proper to assume abnormal speeds for any of the ordinary bakery operations, for although men at times when in the mood and for the purpose of breaking records, or to show just what they can do, are quite willing to work at an excessive speed, they will not keep that rate up constantly in the ordinary course of work.

Two men should be able to scale a sack batch into 2-lb. loaves and hand them up in about thirty minutes, while thirty to thirty-five minutes is a reasonable time allowance for moulding. Cutting back and kneading a batch may occupy two men about ten minutes and one man about fifteen minutes. To "pitch" the trough or the machine requires not less than ten minutes, and if the facilities are poor fifteen minutes may not be too much. It is on broad figures like these that the above and the following time tables are based, and although there may

Times for Various
Operations.

be single bakery operations performed much quicker than the rates here given, it will be generally agreed that as inclusive times—that is, inclusive of all preparatory and finishing work—they are not far out of reckoning. In the above table the two men are assumed to make £8 worth of small goods as well as fourteen sacks of flour into bread. On the basis of nine sacks per man, the amount of bread represents roughly the work of one and a half man, the confectionery standing for the work of half a man. If it may be assumed, therefore, that the average wages of the two men are 30s. per week, the cost of bread manufacture would be about 3s. 2½d. for labour only, while the labour charge for confectionery would be about 1s. 10½d. per £, or not far short of 10 per cent of its total value. This would be a very low cost for labour, and would only be true for what are called common or ordinary shop goods, and would necessarily exclude fancy confectionery, which requires much time in its preparation and finishing, and in which the cost of labour in consequence constitutes a high proportion of the ultimate value.

On p. 388 is a time table for a larger business than that given above, with the duties of the several men a little more complicated.

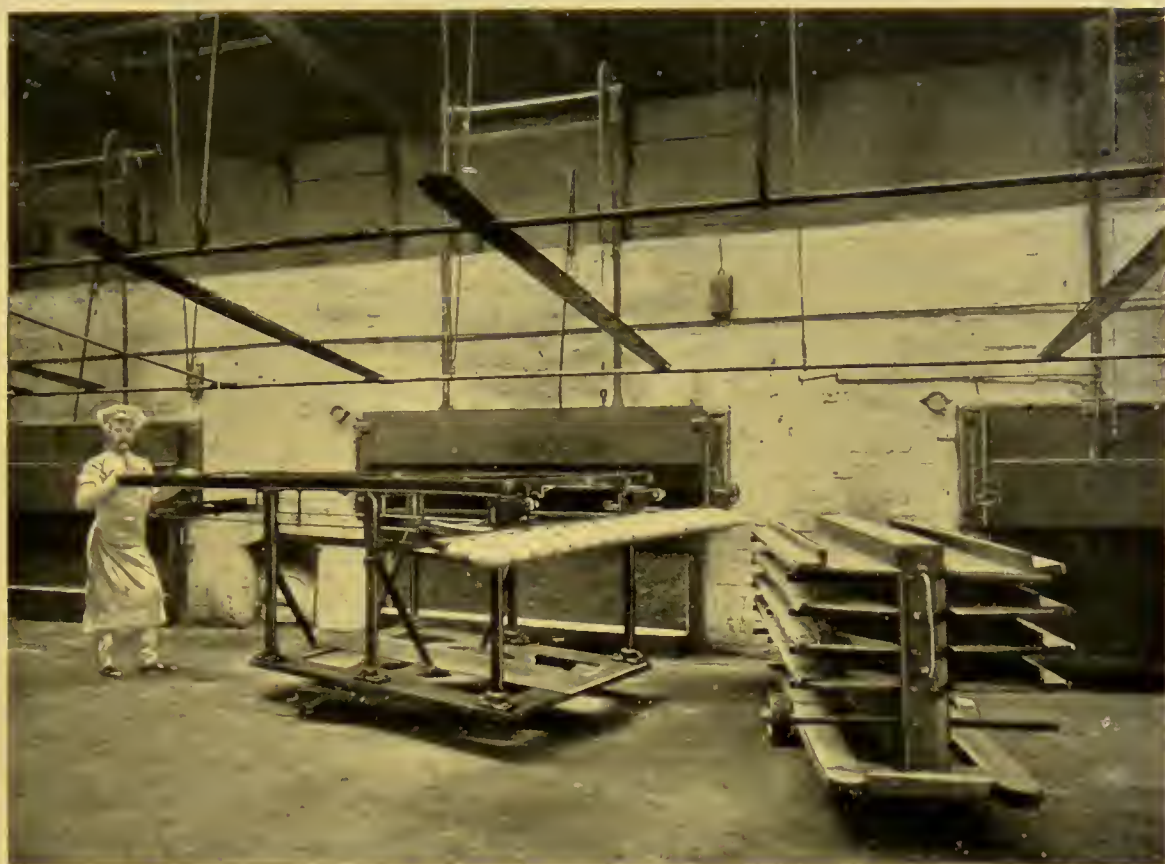
The assumption here is that the forty sacks per week are roughly divided, so that each night's work is constituted by about six and a half sacks into bread and £2 worth of small goods. In practice the work would not be quite so evenly divided. There would be a greater quantity of bread on Friday night than on any other, more cake on Thursday night, and more small goods also on Friday. But these variations were neglected in this specimen table on the understanding that, as the table is designed to show about six and a half sacks bread and £2 worth of small goods as the work to be done in about ten working hours, so, if there was less work the hours would be less than ten, and for the busy nights the hours would be only proportionately longer. In other words, the table is to show the course of the average night's work in the average time. It is assumed that the work is at night, as is general in London and some of the large towns; hence the necessity of keeping the small goods to the last to ensure their freshness in the morning. If the same work were day work, it would then be necessary to transfer those small goods, of the fermented kind at least, with scones and aerated goods, to the beginning of the day's work.

In this time table it is assumed that there are two peel ovens of 7 bus. (about one and a sixth sack) capacity each, and that the first and second doughs are of 14 bus. content, the last one about 11 bus.; the last one including the smaller sizes and fancy breads. In a trade of this size it is quite possible to have the small goods made by the bread bakers if including only plain sorts, but if part consisted of fancy goods, this may be the special work of one of the men, who, however, would also assist the others with the small bread. In this time table it is implied that the doughs are hand-made, although the trade is quite large enough to make a one or two sack dough-making

TIME TABLE SHOWING WORK IN BAKERY WITH TRADE OF
40 SACKS BREAD AND £12 SMALLS PER WEEK

| Hours. | Foreman. | 2nd Hand. | 3rd Hand. | 4th Hand. |
|--------|---|---|--|--|
| 1 | Take up liquor for 1st batch, and book up his list for night. | Prepare ovens for firing, and help 1st dough. | 1st dough, 14 bushels. | 1st dough 14 bushels. |
| | 45 min. for meal. | 45 min. for meal. | 45 min. for meal. | 45 min. for meal. |
| 2 | Take up liquor for 2nd batch. | Fire ovens and help. Cut back 1st dough. | Cut back 1st dough. | Cut back 1st dough. |
| 3 | Weigh up flours, meals, &c., for small bread. Scale 1st dough. | Throw out 1st dough and hand up. Attend ovens. | Make 2nd dough. Finish hand up. | Make 2nd dough. Finish hand up. |
| 4 | Pitch trough for 3rd dough, and help mould 1st dough. Close ovens. | | Mould 1st dough. Cut back 2nd dough. | Mould 1st dough. Cut back 2nd dough. |
| 5 | Set 1st batch. | Set 1st batch. | Make 3rd dough. | Make 3rd dough. |
| 6 | Draw 1st batch. Mould 2nd dough. | Fire ovens and scale 2nd dough. Mould 2nd dough. | Carry bread. Hand up 2nd dough. Mould 2nd dough. | Carry bread. Hand up 2nd dough. Mould 2nd dough. |
| 7 | Set 2nd batch. | Set 2nd batch. | Cut back 3rd dough. | Cut back 3rd dough. |
| | 30 min. for meal. | 30 min. for meal. | 30 min. for meal. | 30 min. for meal. |
| 8 | Draw 2nd batch. Fire ovens. Scale 3rd dough. | Draw 2nd batch. Fire ovens. Scale 3rd dough. | Carry bread. Hand up. | Carry bread. Hand up. |
| 9 | Ferments for buns, &c. Set 3rd batch. Make all small-bread doughs. | | Mould 3rd dough. Attend foreman. | Mould 3rd dough. Clean all baking sheets and tins, &c. |
| 10 | Draw 3rd batch. Fire ovens. Make bun doughs, &c. | | Carry bread. Knock up small dough. | Carry bread. Knock up small doughs. |
| 11 | Scale small bread. | Scale small bread. Make up small mixings, scones, &c. | Mould. | Mould. |
| | Prove small bread, buns, &c., using 1 oven for small breads, the other for buns and scones, after which small cake mixings. | | | |

machine and drawplate ovens profitable. The addition of these appliances would hardly be sufficient to warrant the reduction of the staff by one man, but they might readily reduce the working hours or alternatively increase the possible aggregate amount per week by six or eight sacks,



DEMPSEY'S PATENT BREAD-SETTING APPLIANCE

allowing the average hours to be still nine and a half per night. The dough-making machine would save something like one and a half hour for one man and half an hour for another on each night's work, while the drawplate ovens would save quite an hour each for two men per night, so that the total saving would be the equivalent of over half a night's work for one man. If the number of men is not reduced, their capacity should be increased by that amount of work. In this case, assuming that the average wage per man is 30s. a week, the small goods would represent four-fifths of a man's work, or 24s. for the week; the cost would therefore be for labour only 2s. per £, or 10 per cent of the value. The cost of labour for bread would be 2s. 4 $\frac{3}{4}$ d. per sack, or a little more if the average wage were above 30s. If in a trade of this size the labour charges were no higher than this, and the work could be properly done without undue harassment of the workmen, the employer would be fortunate.

It would be possible to supply tables for businesses of various sizes and with different proportions of bread and confectionery, but the variety occurring actually is so great that no specimens given would exactly fit more than a few bakeries. The folding plate gives a table for a larger bread trade without any confectionery, but including all that is generally implied in the term small bread. In such a business confectionery proper would be the concern of a special staff.

For a trade of this size it is assumed that there is a two-sack dough-making machine in use, and that there is a distinctive division of labour, so that the foreman has specialized functions, and the dough-maker confines himself to practically one operation. The stipulation is for four ovens of one-sack capacity each, and the times stated are for peel ovens. The use of drawplates would, of course, increase the men's capacity, by saving time in filling and emptying. The method of work on which the table is designed is to allow four men to start work two hours before the others and finish also two hours sooner. The foreman is marked as one of those who start early, so that he may see to the begin-
 nings of the day's work and have the whole plan ready before
 the remainder of the men come in. He sees to the weighing of yeast,
 salt, and other materials, except flour, required for the several doughs,
 the responsibility of the dough-maker being confined to measuring water,
 mixing the small batter sponges preceding each dough, sifting and
 weighing the flour, attending to the engine or motor and the dough-
 making machine. The other two early men are variously employed in
 attending to the furnaces and making and baking the several sorts of
 proprietary and fancy breads which constitute a certain portion of each
 day's work. Those early men work much together during the whole
 day, with the object of letting them have meals at the same time, and
 so that they may finish together. The late men, with the exception of
 the assistant foreman, are kept for the greater part of the time handling
 the successive batches as they become ready, assisted in this work by those

Duties of
the Men.

who are setting the bread and those attending on them at the intervals of fifteen minutes or so between the setting of the last of each second oven of bread and the drawing of the first loaves of the first oven. In such circumstances the whole operation of handling four sacks of flour in dough, after it is ready for the oven, must on the basis already given occupy not less than about eighty minutes; so that, to ensure regularity, it is necessary that the scaling, moulding, and proving of the loaves should occupy at least five minutes less in each case. The whole time of work in the bakery must depend on oven capacity and the time taken to fill and empty them. As four to five minutes is sufficient time to fill and empty one plate by two men, there is evidently a saving of at least twenty minutes on the double operation if drawplates are used. As this also relieves the men from the ovens to assist at moulding, &c., there is no difficulty in speeding up the whole work so that the total time from the beginning of setting to taking the last of the four batches from the ovens should be about one hour, and under the circumstances stated the scaling, moulding, &c., could be done in the same time. The use of four drawplate ovens might easily result in the work being finished nearly an hour sooner, or about sufficient saving could be effected to get the work done in the same time as given on the table with one man less, or, stated in cash, a saving of about 30s. per week.

The accompanying plate shows a quite new appliance designed to reduce greatly the time occupied in setting loaves in an ordinary peel Bread-setting oven. For the use of this machine the oven door has to Appliance. be made the full width of the oven. The illustration shows the method by which the machine is worked. Two rows of loaves are placed on the end of the setter; then by means of the sliding frame one man can easily deposit these two rows at once in the desired position on the oven bottom. This machine is now in successful operation in the large bakery of Messrs. Hughes, Belfast.

As the times here given stipulate for the foreman starting early, it is necessary that there should be someone left in authority when he The Assistant leaves. This position is occupied by the second hand, or Foreman. in a business of this size he might rightly be designated assistant foreman. He sees to the finishing of the work, and completes the record of produce, &c., necessarily left incomplete by the foreman. In this business the cost for labour, assuming wages still to be an average of 30s. per week, would be at the rate of 1s. 9½d. per sack of flour made into bread, or on the assumption that drawplate ovens are in use, and the saving effected thereby would be about the amount given above, then the cost per sack for labour would only be a small fraction over 1s. 7d.

No effort has been made here to draft a time table for a complete bakery plant with dividers, moulders, provers, &c., because of the difference in oven facilities in connection with the various plants. As has

TIME SHEET FOR COURSE OF WORK FOR ONE DAY OF NINE HOURS IN A MACHINE BAKERY WITH A TRADE OF 150 SACKS PER WEEK,
OR ROUGHLY, 24 SACKS INTO LARGE BREAD, AND 1 SACK INTO SMALL AND FANCY BREAD, PER DAY

| Time. | Foreman. | Assistant Foreman. | 2nd Hand. | Table Hand. | Table Hand. | Table Hand. | Table Hand. | Table Hand. | Dough Maker. |
|------------|---|---|--|---|---|---|---|---|---|
| 1st hour. | Weigh yeast, salt, &c., for 11 doughs of 2 sacks each. | — | — | — | — | — | Make doughs for milk. Vienna and fancy bread. | See to ovens. Assist with brown bread. | Make 1st dough with extra yeast. Make short sponge for 2nd. Make 2nd dough. |
| 2nd hour. | Make out or examine list, and prepare a plan of work with any alterations needed. | — | — | — | — | — | Mould milk and brown breads. Scale Vienna. | See to ovens. Assist with fancy breads. | Make sponge for 3rd and 4th doughs. Make 3rd dough. Make 4th dough. |
| 3rd hour. | Note condition of ovens, heat of bakery, flour, &c. Assist with fancy bread. | Throw out 1st and 2nd doughs. Scale, hand up, and mould. | Assist with 1st and 2nd doughs. | Assist with 1st and 2nd doughs. | Assist with 1st and 2nd doughs. | Assist with 1st and 2nd doughs. | Mould Vienna, &c. Bake milk and brown breads. | See to Ovens. Clean tins, &c. &c. | Sponge for 5th and 6th doughs. Make 5th dough. Make 6th dough. |
| 4th hour. | Half-hour meal. Set two ovens. | Finish moulding. Set two ovens. | Finish moulding. Throw out 3rd and 4th doughs. Scale. | Finish moulding. Help with 3rd and 4th doughs. | Finish moulding. Help with 3rd and 4th doughs. | Finish moulding. Help with 3rd and 4th doughs. | Half-hour meal. Hand on for two ovens. | Half-hour meal. Hand on for two ovens. | Meal for half-hour. Sponge for 7th and 8th doughs. Sift flour, &c. |
| 5th hour. | Note quantities. Draw two ovens. | Meal half-hour. Draw two ovens. | Mould 3rd and 4th doughs. | Assist moulding. | Assist moulding. | Assist moulding. | Prepare for bread. Carry away and pack bread. | Attend to fires. Carry away and pack bread. | Make 7th dough. Make 8th dough. Sponge for 9th and 10th doughs. |
| 6th hour. | Set two ovens. Draw two ovens. | Set two ovens. Draw two ovens. | —Meal half-hour.— Throw out 5th and 6th doughs. Scale. | —Meal.— Help scaling 5th and 6th. | —Meal.— Help scaling 5th and 6th. | —Meal.— Help scaling 5th and 6th. | Hand on two ovens. Carry and pack two ovens. | Hand on two ovens. Attend fires. Carry and pack two ovens. | Make 9th dough. Make 10th dough. Sponge for last doughs. |
| 7th hour. | Finish drawing. Set two ovens. | Finish drawing. Set two ovens. | Finish scaling and mould 5th and 6th. Throw out 7th and 8th doughs. Scale. | Help moulding, &c. Help scaling. | Help moulding, &c. Help scaling. | Help moulding, &c. Help scaling. | Hand on two ovens. | Hand on two ovens. | Make 11th dough. Make 12th dough. Clean machines, brush, and oil. |
| 8th hour. | Half-hour meal. Draw two ovens. | Half-hour meal. Draw two ovens. | Finish scaling. Mould 7th and 8th doughs. | Finish scaling. Help moulding 7th and 8th. | Finish scaling. Help moulding 7th and 8th. | Finish scaling. Help moulding 7th and 8th. | Half-hour meal. Carry and pack two ovens. | Half-hour meal. Carry and pack two ovens. | Pitch flour for 1st and 2nd batches for following day. Meal half-hour. |
| 9th hour. | Set two ovens. Draw two ovens. | Set two ovens. Draw two ovens. | Throw out 8th and 9th. Scale and mould. | Help scaling 8th and 9th. Help moulding. | Help scaling 8th and 9th. Help moulding. | Help scaling 8th and 9th. Help moulding. | Hand on two ovens. Help moulding. Carry away two ovens. | Hand on two ovens. Help moulding. Carry away two ovens. | Brush up flour store. Fold sacks. Fill up form with quantity of each sort flour used. Assist with moulding. |
| 10th hour. | Set two ovens. Scale 10th and 11th. Make up book. | Set two ovens. Help scaling 10th and 11th. Draw two ovens. | —Meal half-hour.— Help moulding. | —Meal half-hour.— Help moulding. | —Meal half-hour.— Help moulding. | —Meal half-hour.— Help moulding. | Hand on two ovens. Help scaling 10th and 11th. Carry two ovens. | Hand on two ovens. Help scaling 10th and 11th. Carry two ovens. | Help scaling 10th and 11th. Draw two ovens. |
| 11th hour. | — | Set two ovens. Throw out 12th. | Set two ovens. Help scale 12th. | Hand on two ovens. Help scale 12th. | Hand on two ovens. Help scale 12th. | See to fires, &c. Help scale 12th. | — | — | — |
| 12th hour. | — | Mould 12th. Set one oven. Finish making up foreman's book. Draw one oven. | Help mould. Set one oven. Clearing up bakery tables. Draw one oven. | Help mould. Hand on one oven. Scraping out and greasing trucks. Carry one oven. | Help mould. Hand on one oven. Clearing up bakery, &c. Carry one oven. | Help monld. Start clearing out ashes, and getting in coke for ovens for next day. | — | — | — |

been already pointed out, the speed of working in the bakery must be wholly governed by the number of ovens and the rate at which they will bake. For three large drawplate ovens baking for an automatic plant two strong men would be fully employed in filling and discharging these, the short intervals between filling and discharging being occupied in packing the finished loaves. One man in the stokehole could attend to the fires of six such ovens. An automatic plant to keep six large drawplates going steadily would need one doughman and at least four men in constant attendance on the machines. This with the foreman would make a total staff of nine men. In a day of eight working hours the ovens would be capable of baking about forty-six sacks of flour in bread, or a weekly average of two hundred and seventy-six sacks per week. At the same average wage of 30s. per week the cost for labour would be slightly under 1s. per sack. This proportion agrees roughly with the actual cost in a factory with which the writer has considerable acquaintance.

Distribution of
Labour with an
Automatic Plant.

The examples here given of the construction of flow sheets for the work of the bakery are sufficient to show that the work is not very difficult, while its usefulness is almost too obvious to need emphasizing. Such a table shows the foreman or the master at a glance the whole relation of one part of the work to another, and with such a sheet before them it is possible to speed up or alter the course of the work in detail without creating the confusion and irritation which sometimes follow when an effort of the kind is made in a general way without special reference to the parts that are really suitable for altering and the parts that are not.

Value of
Flow Sheets.

The great variety, both of kind and of character, of confectionery goods creates some difficulty in constructing time tables on the above lines for that branch of the business; yet, so far as it can be done and so far as the usual routine work is concerned, such tables may be as helpful to the confectionery as to the bread foreman.

Time Tables in
Confectionery Work.

CHAPTER LVIII

BAKERY MANAGEMENT

Except in comparatively large establishments, bakehouse bookkeeping is not one of the strong features in the general trade either in breadmaking or confectionery, and when it is essayed at all it is usually in the roughest and most haphazard way. This carelessness in the matter of keeping accounts is probably a survival in method of the time when all bakeries were small concerns over which the master presided in person. He did not consider it necessary to keep a correct account of the material used in each mixing or the produce in finished goods from it, and as he gradually relin-

quished the active work and control of affairs into the hands of employees so the same easygoing method was continued, partly no doubt because of the trouble of instituting methods more precise, and partly from the mistaken notion that a better check system seemed to reflect on the integrity and honesty of the employees. Even when a master is himself in charge there is no greater folly than that of working without proper manufacturing accounts; it is so very easy to be working at a gradually increasing loss while ostensibly making a profit. It is not enough to calculate for once the profits on each mixing as it ought to be, and then to assume that every time the mixing is made the same amount of profit accrues. Mixings with the greatest care vary in the weights of the several materials, and vary still more in the produce on different occasions, so that it is never safe to depend on what might be called a standard profit, but to realize what the actual profit is on each day's work.

One of the difficulties a master baker has, is in getting a foreman who will realize his responsibility and take pains to keep his accounts properly. **Importance of a Good Foreman.** The very loose system prevailing in the trade has left men without any training in this matter; yet the simplest details only are needed, and the task of supplying them can be made very easy by a little thought, and when a habit is acquired the work ceases to be a task. The main factor, however, in even the simplest system of bookkeeping is the human element. If the foreman who supplies the details is not by nature or training a careful man, or if the master does not properly realize the importance of the matter and is not insistent, accounts may readily become a snare rather than a help in the proper conduct of the business. It is a very common experience that master bakers who have themselves no practical experience of the trade are often much more successful than those who are thoroughly practical men, and it is also quite common to find a comparatively poor workman make a most efficient foreman, because in both cases they have something of the organizing faculty and something of the precision and correctness of a bookkeeper.

There is unfortunately no method yet devised for discovering or indicating the qualities of a foreman, and the evidences too often accepted but help to lead astray. The self-satisfied, bouncing man is usually more likely to receive an appointment than one inclined to be modest; and one with a sheaf of characters than one too independent to ask for such things, which in fact are generally of little value, as on occasions they are given by weak masters to very indifferent men as a means of quickly getting rid of them. But even when a man is taken on trial it may readily happen that he may make a poor show for the first few days. It is really, however, on the spirit and determination of the master or the manager that the part of the duties of the foreman and the men which is conducive to good work depends, and if correct bakehouse accounts are firmly insisted upon they can generally be obtained. There is one sort of workman, who in some respects may be quite a desirable employee, who still objects very strongly to supply detailed accounts of the ingredients used in his mixings, as he

considers these personal secrets. He is prepared for his wages to make the goods wanted, but not to let employer or anyone know what he uses in them. This type of man is becoming scarcer every year, and in ordinary circumstances is likely to die out. An employer at the mercy of such a one has no control over his own business, and he is likely to be making and selling goods at much less than the proper profit. Those men who have secret, and, of course, most valuable recipes for everything, are generally those who are either very narrow-minded naturally or have had very limited experience, and regard their knowledge as much more valuable than it really is. In any case, knowledge of all sorts is now so widespread that no one need depend, in building up a good business, on anything very special or secret, nor need refrain from knowing all the manufacturing details of the goods one sells. In cases in which a man is specially engaged to introduce new goods, it should always be understood that his wages are fixed high enough on account of such introduction, or a special price should be paid for recipe and method of the new goods apart from wages. This is not a general practice in the trade, but where it has been adopted it has been successful in stimulating the workmen, and has removed all excuse for neglecting a proper account of cost of materials.

In a very small business, where every item of expense has to be watched, it may be quite sufficient to have a broad-page book in which to keep the records mentioned above, but in larger businesses it is usual to have printed forms on which the details are given. It is an important point whether it is sufficient for the foreman to fill in details of the quantity of materials he has used for the whole day's work without setting down the amounts for each mixing, or whether the mixings should be set out in detail. The former method under certain circumstances is quite sufficient to enable an employer to ascertain whether the business is paying or not, but if there is a loss or insufficient profit on certain goods it supplies no data as to where the loss is. It is a great deal more trouble to set down quantities for each mixing and to give correct details of the produce, owing to parts of mixings being left over or used in several other mixings, but the difficulties thus occasioned are by no means insurmountable if the habit of keeping accounts has been acquired. Either of two forms may be used in the bakery. In one the details of material used in the respective goods is given, while in the other particulars are extended also to the produce of the mixings. As a matter of practical detail the writer prefers that the figures should first be entered on a form at or near the time of weighing, then at the end of the day's work entered in ink in a book ruled in the same way as the form. This entails more stationery and a double record, but it gets over the difficulty of depending too much on memory. The worker's hands may be greasy, or the place he works at may be inconvenient for keeping a book beside him, but a form pinned on a board, with a pencil on a string attached can be hung up in any situation and details marked before the actual weighing begins, serving as a record as well as a reminder that nothing is forgotten. Such a form may be too dirty or

too greasy to keep as a permanent record, hence the transfer of details to a book. The form on the accompanying plate is adapted to that end.

The only objection to a form containing the details of produce as well as material is the inordinate length of the form. It is, of course, quite as suitable, especially if the whole is afterwards posted in a book, that a separate form for produce with the names of the goods printed in the same order can be used. The top line should contain the names of all the ingredients kept in the store or that may be used in the day's work, with a few spaces for such extras as apples, lemons, &c. The left-hand side of the form contains

The Form for Recording Materials. the general list as made in the bakery, set out if possible in the same order as on the lists used for the orders, for vanmen, and for shops. None of these goods will have entries in every one of the columns of the different materials, but it is quite evident that at the end of the day the different items under (say) butter, when added up, should show at a glance how much butter had been used for that day, and in the same way for each material. These figures should correspond with the quantities received from the store. Amongst materials such compounds as puff paste, short paste, Genoese, &c., are placed, because these already prepared are used as raw materials in a good many articles. To get at the price of small quantities of each of them it is necessary to standardize the cost of the several mixings, and then fix a certain rate per lb. for each. The form in which the produce from the mixings is to be given depends on the method of selling, but it is better that the selling price should always be used. Thus, if goods are sold at say 7 for 3d., the produce should be set down in money value; or if sold at various prices or with different discounts, then some standard near the average should be used or the retail selling price, leaving the larger discounts to be subtracted in the further stages of bookkeeping. It is quite easy to insert money columns after the materials and other money columns after the produce, but such additions make the sheet large and rather complicate than simplify. It is really better to keep separate sheets and separate books for the distinctive purpose of keeping

Bread and Confectionery Accounts Together. quantities and for setting down prices, and striking the balance each day. It is usual when both bread and confectionery are made together to keep only one form or one book for both, and if they are kept quite distinct this amalgamation presents no serious difficulties. In bakeries where the two branches of the business are kept quite separate, separate forms and separate books must be used for each.

It is always difficult to get quantities of materials properly recorded, especially in small establishments, and it is quite usual to hear small masters say that they find it more satisfactory to send to the nearest grocers and obtain what material they require for their confectionery, than to keep bulk supplies on the premises, and let the workmen take just what they choose.

The Grocer as Storekeeper. The grocer allows the baker a book, and if the quantity of material used is considerable he will generally be willing to make special terms as to price. The grocer on this system really takes on

FORM SHOWING METHOD OF INDICATING MATERIALS USED

Date.....

| Goods Made. | MATERIALS. | | | | | | | | | | | | | | | | | | | | | | | | PASTES, ETC. ¹ | | | | | | | PRODUCE. | | | | | | |
|--------------------|-------------------|------------------|------------------|------------------|-------|------------------|------------------|-------|------------|--------------|--------|------------------|--------------|--------|------------------|------------------|-----------------|-----------|-----------|-----------|-----------|----------------|-----------------|-------|---------------------------|---------|------------------------------------|-------------|--------------|-----------------|-----------------------|----------|-------------|------------|------------------|-------|------|-------|
| | Flour. | Soda. | Cream of Tartar. | | Milk. | Eggs. | Butter. | Lard. | Margarine. | Neutral Fat. | Yeast. | Castor Sugar. | Moist Sugar. | Chips. | Fondant. | Prepared Pulp. | Jam. | Sultanas. | Currants. | Cherries. | Angelica. | Whole Almonds. | Ground Almonds. | Peel. | Mixed Fruit. | Spices. | Other Materials. | Puff Paste. | Short Paste. | Sponge Mixture. | Madeira Cake Mixture. | Genoise. | Chou Paste. | Bun Dough. | $\frac{1}{2}$ d. | 1d. | 2d. | &c. |
| Scones..... | lb. | oz. | lb. | oz. | qrt. | doz. | lb. | lb. | lb. | lb. | oz. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | oz. | oz. | oz. | oz. | lb. | lb. | oz. | salt. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | 26/6 | — | — | — |
| | 56 | 14 | 1 | 12 | 14 | — | — | 2 | — | — | — | 7 | 1 | — | — | — | — | 3 | — | — | — | — | — | 1 | — | — | 7 oz. | — | — | — | — | — | — | — | 15/ | 25/9 | — | — |
| Buns, Ferment .. | 2 | — | — | — | 2 | — | — | — | — | 8 | — | — | 12 | — | — | — | — | — | — | — | — | — | — | — | — | 1 oz. | — | — | — | — | — | — | — | — | — | — | — | — |
| " Dough..... | 16 | — | — | — | — | — | 1 $\frac{8}{16}$ | 1 | — | — | — | 2 | — | — | — | — | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3/ | — | — | — | |
| Chelsea Buns..... | 20 | — | — | — | 2 | 2 $\frac{8}{16}$ | 4 | — | — | — | — | 2 | — | — | — | — | — | — | 1 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 13/ | — | — | |
| Bath Buns..... | 18 | — | — | — | 2 | 4 $\frac{6}{16}$ | 5 | — | — | — | — | — | 2 | — | — | — | — | 4 | — | — | — | — | — | 1 | — | — | — | — | — | — | — | — | — | 13/6 | — | — | — | |
| Victorias..... | — | — | — | — | — | — | 2 $\frac{8}{16}$ | — | — | — | — | — | — | — | — | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | 20 | — | — | 10/6 | — | — | — |
| Short Paste..... | 40 | — | — | — | 3 | 10 | — | 10 | — | — | — | — | — | — | — | — | 20 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 42/ | — | — | |
| Puff Paste..... | 12 | — | 0 | 0 $\frac{1}{2}$ | — | 6 | — | 6 | — | — | — | 1 | — | — | — | 6 | — | 3 | — | — | — | — | — | — | — | 1 | — | — | — | — | — | — | — | — | 18/ | — | — | |
| Genoise Paste..... | 1 $\frac{3}{4}$ | — | — | — | — | 2 $\frac{8}{16}$ | 1 | — | — | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Sponge Cakes..... | 4 | — | — | — | — | 3 $\frac{4}{16}$ | — | — | — | — | — | 4 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 5/ | — | 4/ | |
| Sponge Fingers... | 2 | — | — | — | — | 1 $\frac{4}{16}$ | — | — | — | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Swiss Roll..... | 1 | — | — | — | — | 2 | — | — | — | — | — | 1 | — | — | — | 1 $\frac{8}{16}$ | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3/9 | — |
| Petits Choux, &c. | 2 | — | — | — | — | 2 $\frac{4}{16}$ | 2 | — | — | — | — | 4 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | |
| Shortbread..... | 12 | — | — | — | — | 6 | — | — | — | — | — | 3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 19/ | — | — | | |
| Madeira Cakes.... | 10 | 1 $\frac{1}{2}$ | 0 | 3 | 2 | 2 $\frac{8}{16}$ | 3 | — | 1 | — | — | 5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 8/ | — | 10/8 | |
| Cheese Cakes..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 6 | — | 12 | — | — | — | — | — | — | — | |
| 11 Gâteaux..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1 | — | 1 | — | — | — | — | 8 | — | — | — | — | — | — | — | — | — | 4 | — | — | — | — | 8/ | |
| &c..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 3 | — | — | — | — | 7/6 | |
| Petits Fours..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1 $\frac{1}{2}$ | — | 1 $\frac{1}{2}$ | — | — | 3 | 2 | — | — | — | — | — | cream. | — | — | — | — | — | — | — | — | — | — | |
| Eclairs, &c..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2 | — | — | — | — | — | — | — | — | — | — | — | 2 qrt. | — | — | — | — | 5 | — | — | 17/6 | — | — | |
| Totals..... | 252 $\frac{3}{4}$ | 31 $\frac{1}{2}$ | 3 | 15 $\frac{1}{2}$ | 34 | 27 | 46 | 6 | 16 | 1 | 8 | 27 $\frac{1}{4}$ | 32 | 2 | 4 $\frac{8}{16}$ | — | 29 | 9 | 6 | 3 | 2 | 8 | — | 2 | — | 1 | salt. 8 oz. cream. 2 qrt. | 6 | — | — | 12 | 7 | 5 | 20 | 49/6 | 172/3 | — | 33/11 |

¹ These pastes are not calculated as materials, for the materials used in them are already counted, but they are indicated in each case for the purpose of calculating the gross cost of goods in which they form part of the raw material.

the function of the baker's storekeeper, the cost to the baker being only the apparent difference between the wholesale price of the materials and the prices arranged with the grocer, and as the result of the keen competition amongst the grocers this margin may readily be very small. But the actual cost to the baker may even be less than this; it may, in fact, be highly advantageous to buy from the grocer in this retail way rather than to stock bulk. Grocers are generally keener buyers of such produce as butter, margarine, sugar, eggs, &c., and their retail prices are not infrequently below the wholesale prices that many a small baker has to pay. A still greater saving is effected in the accuracy with which the grocer weighs and charges for the goods. When bakers can go to a tub of butter, &c., and take what they like it is curious to note how careless they become with **Waste in the Bakery.** regard to the accuracy in weight, and it is too common an experience to find men use the dearest of materials without even weighing at all. On this account stocks do not balance at the end of the week. If the baker wants only a pound of butter and a dozen of eggs from the grocer he gets these quantities accurately, and the employer has to pay for no more; there is something too in having a record that is quite reliable.

When the establishment is moderately large, but not sufficient to maintain a storekeeper, the best plan is to make someone whose time is not otherwise quite filled up with such duties as shopkeeping, **The Storekeeper.** packing, &c., responsible for the stores. When that is impossible or inconvenient then the foreman should be responsible, and all the more valuable materials should, if possible, be still kept under lock and key. In quite large bakeries it is not uncommon to find the stores quite open, and no proper check kept on the quantities used each day except the check obtained when stock is taken. This is not satisfactory. In a very large establishment there is, of course, no difficulty in keeping stores correctly, because it is a proper measure of economy to have a regular storeman in charge, and as he is responsible for shorts, he will see that no one has any materials for which his department is not duly charged. A storeman's duties consist in keeping a correct record of all goods received, with all charges on them; checking weights; noting conditions as to empties, &c., and seeing that these are properly kept and returned; keeping stores in order, and attending to the necessary accounts. Nothing very elaborate in the way of bookkeeping is necessary, so long as the system adopted provides a satisfactory check and supplies accurate data for ascertaining how the manufacturing side of the business pays. A specimen of the Store Book is shown on page 396.

It is the practice with some firms to reserve the information of cost of material strictly for office use, and not open to either storeman or workmen. When this is done, the columns shown for **Storeman not Concerned with Costs.** such items as "prime total cost", "discount", and "cost per pound, &c.", will not be filled in by the storeman, nor entered into his book at all, but a duplicate book will be kept in the office, into which the items in the storekeeper's book will be posted daily,

and the items already mentioned as left out will be filled in the office Store Book. The purpose of the item "cost per lb., &c." is for reference when working out costs of materials used, and also to show at a glance when the value of any material is increasing or decreasing. This cost should be worked out to a much smaller fraction of a penny than a farthing if necessary, as a very small fraction may aggregate a considerable sum in the total cost of any material used in a week.

One other book, preferably a broad one, must be kept by the storeman. This is in the nature of a goods ledger, and should show at the beginning of the week the quantity of stock of any particular kind in hand, the quantities used each day, total used during the week, the quantity short or over as checked by stocktaking, and the total stock in hand at the end of the week. Whatever care has been exercised in keeping a record of material used, it will frequently be found that some item or other of the stock is short, and the only safe thing to do is to take stock regularly every week. To this end it is most important that stores be kept in order, and that not more than one parcel of any sort of material should be broken into at once; then stocktaking need not occupy more than an hour or so, even in the case of a considerable stock, as whole packages are easily counted and broken packages only need to be weighed. The actual material used or lost is, of course, discovered by the stocktaking, and if stocks are persistently short greater vigilance must be shown by the storekeeper and the source of leakage looked for. There is no need to elaborate the system or the books more than is absolutely essential. The ruling shown on page 396 the writer has found quite enough for all purposes. The specimen shows the figures for flour, butter, and sugar in a large confectionery bakery during one week.

This sheet shows at a glance how the stock of each kind of material stands, and with what degree of accuracy, as shown by the stock short at stocktaking, the workmen are keeping the record of material used. One line left vacant in the middle of the week serves to admit any additions to stock during the week, which can be added in stock column. The weights by which quantity of stock is indicated are made to depend on the size of packages in which the distinctive goods are made up, so that bulk packages only need to be counted. Thus flour, which is generally made up in sacks of 280 lb. or half-sacks of 140 lb., is reckoned in sacks with fractions in pounds. Sugar is sold in 1-cwt. boxes or 1-cwt. or 2-cwt. bags. It is convenient, therefore, to make a cwt. the unit and to give odd quantities in pounds. The same is true of butter, which is generally sold in 1-cwt. casks or $\frac{1}{2}$ -cwt. boxes. There is no difficulty in adopting any specific weight as the unit; thus, where Irish firkin butter is used, the firkin varies in weight, but can be used as the unit; so with flour in the Midland counties, where the sack is 224 lb., the sack can still be used as the unit. On account of the great number of different

Materials used
and Stock Book.

Leakages.

The Stock
Units to Suit
Custom.

kinds and qualities of material used by the baker and confectioner, it would be expensive and awkward to have a stock ledger specially set out with names of material, &c., already printed. It is sufficient to have the pages ruled in the manner shown, with seven spaces. This allows for the admission of three qualities of each specific material, and the vertical column can be long enough to serve in each case for four weeks. In cases like sugar or fats, where there may be four or five varieties in use, it is only necessary to occupy two sets of spaces with the details. This Stock Book should show details in the same way as that indicated for all goods taken out of store for the use of depots or branches, although in a business with many branches only such things as raw material, hams, sugar, eggs, &c., are provided out of the same store as that supplying the bakeries, but there is no very good reason why any distinction should be made if one storekeeper is able to overtake all the work. In addition to keeping the two books described, the storeman will enter into a book the materials supplied to the foreman, or to each individual foreman if the establishment is divided into departments. This book should be ruled in the same way as the sheets kept by the workmen (p. 396), and should serve as a check on the latter.

The method of communication between the foreman and the storekeeper, and the form for obtaining materials, must depend on the manner of conducting the work. In many establishments the plan adopted is to keep to standard sizes of mixing, and it is not unusual for the storekeeper, on being notified that a certain mixing is needed, to weigh up all the materials and send or take them to the table where they are wanted. This plan is adopted exclusively in biscuit and cake factories, partly as a means of preventing irregularities and partly to prevent the workmen from discovering the details of the mixings used. The same method is followed in a good many bakeries, but it is more or less a survival of the time when every recipe was treated as if it were a profound secret. It is not quite so suitable for a modern bakery conducted on lines intended to prevent all sorts of marginal losses. Thus in large establishments, where there are a number of branch shops or a number of roundsmen, the rule is, or ought to be, that each shop and roundsman makes out a proper detailed order of all goods required. These orders are then totalled, and the bakers' and confectioners' orders made out from them. As the quantities to be sent out are what have been previously ordered, all the goods made above the quantities are likely to be left, and the loss on them will reduce the profit on the whole. Good management not infrequently consists in preventing losses of this kind, by securing that only the quantities of each article ordered are made. When the men are in the habit of keeping to standard mixings this is impossible. But with a little care it is easy to prepare tables of the mixings, giving the quantities for increments, say, of 1 doz. of the respective goods.

The reeipes can be dealt with one at a time, and a set of tables prepared for each head of a department, and pasted on a board to be kept near the table, or if that is ineonvenient the tables may be made up in a book kept in the possession of the foreman. It may appear to some who have been familiar with standard mixings only that this method would be conducive to errors, but those who have practised it find no ineonvenience in adapting quantities to the requirements of the orders. The specimens given on p. 400 for eut seones and bun dough will show the manner in which such tables may be constructed. The milk given in the bun-dough mixing refers to that condensed in tins, and it therefore augments slightly the quantity of water given. The tables otherwise are self-explanatory.

Tabulated
Recipes for
all Quantities.

The fractions of ounces given are as nearly as possible right by calculation, but need not be rigidly adhered to in practice. Suffieient aecuracy is obtained by weighing up to the full ounces where a fraction is shown.

An efficient and careful storeman easily earns his wages in a large establishment, and in ever so small a one it pays the employer to exercise the greatest care in store book-keeping.

Value of Storeman.

Having a correct record of the quantities of materials in the goods, the next thing is to keep an equally correct record of the quantity of goods produced. To facilitate this part of the work it is a good plan to have all boards and boxes used for packing

Record of Goods
Produced.

either bread or small goods made of such dimensions that they will fit the standard sizes of racks, whether in the bakery, the breadroom, the shop, or the vans; then to have a rule that goods packed in rows should have the same number in each row and the same number in each box. When this rule is adhered to, counting becomes very easy. As the goods are counted the quantities are marked on a sheet similar to the order form supplied to the bakers, and the figures afterwards compared with those supplied by the foreman. The packer or storekeeper in charge of the finished goods is then responsible for the quantities noted. There is sometimes considerable disparity between the foreman's figures and those of the packers, and disputes not infrequently arise. When this occurs often it is necessary to have an acknowledgment from the packer of the quantities he receives. This is best done by having slips of paper on which the baker who takes the finished goods to the store writes the name and number, and gets the packer to sign for

System of Checks.

each box or for the totals of the several kinds. To those unfamiliar with checks of this sort the system may seem troublesome, but when it is insisted on with firmness, it soon becomes part of the ordinary routine, the trouble of which is unnoticed. The packer acts as a check on the bakers, but there must also be a check on the packers. Finished goods, especially small goods, have a tendency to disappear before they reach

PENNY CUT SCONES

| To produce Dozens. | Flour. | | Oil. | | Sugar. | | Fruit. | | Milk. | |
|-----------------------|--------|-----|------|-----|--------|-----|--------|-----|-------|-----|
| | lb. | oz. | lb. | oz. | lb. | oz. | lb. | oz. | qrt. | pt. |
| 1 | 1 | 5 | 0 | 2½ | 0 | 3 | 0 | 2¾ | 0 | 0⅔ |
| 2 | 2 | 10 | 0 | 5 | 0 | 6 | 0 | 5½ | 0 | 1⅓ |
| 3 | 3 | 15 | 0 | 7½ | 0 | 9 | 0 | 8¾ | 1 | 0 |
| 4 | 5 | 4 | 0 | 10 | 0 | 12 | 0 | 11 | 1 | 0⅔ |
| 5 | 6 | 9 | 0 | 12½ | 0 | 15 | 0 | 13¾ | 1 | 1⅓ |
| 6 | 7 | 14 | 0 | 15 | 1 | 2 | 1 | 0½ | 2 | 0 |
| 7 | 9 | 3 | 1 | 1½ | 1 | 5 | 1 | 3¾ | 2 | 0⅔ |
| 8 | 10 | 8 | 1 | 4 | 1 | 8 | 1 | 6 | 2 | 1⅓ |
| 9 | 11 | 13 | 1 | 6½ | 1 | 11 | 1 | 8¾ | 3 | 0 |
| 10 | 13 | 2 | 1 | 9 | 1 | 14 | 1 | 11½ | 3 | 0⅔ |
| 11 | 14 | 7 | 1 | 11½ | 2 | 1 | 1 | 14¾ | 3 | 1⅓ |
| 12 | 15 | 12 | 1 | 14 | 2 | 4 | 2 | 1 | 4 | 0 |
| 13 | 17 | 1 | 2 | 0½ | 2 | 7 | 2 | 3¾ | 4 | 0⅔ |
| 14 | 18 | 6 | 2 | 3 | 2 | 10 | 2 | 6½ | 4 | 1⅓ |
| 15 | 19 | 11 | 2 | 5½ | 2 | 13 | 2 | 9¾ | 5 | 0 |
| 16 | 21 | 0 | 2 | 8 | 3 | 0 | 2 | 12 | 5 | 0⅔ |
| 17 | 22 | 5 | 2 | 10½ | 3 | 3 | 2 | 14¾ | 5 | 1⅓ |
| 18 | 23 | 10 | 2 | 13 | 3 | 6 | 3 | 1½ | 6 | 0 |
| 19 | 24 | 15 | 2 | 15½ | 3 | 9 | 3 | 4¾ | 6 | 0⅔ |
| 20 | 26 | 4 | 3 | 2 | 3 | 12 | 3 | 7 | 6 | 1⅓ |
| 21 | 27 | 9 | 3 | 4½ | 3 | 15 | 3 | 9¾ | 7 | 0 |
| 22 | 28 | 14 | 3 | 7 | 4 | 2 | 3 | 12½ | 7 | 0⅔ |
| 23 | 30 | 3 | 3 | 9½ | 4 | 5 | 3 | 15¾ | 7 | 1⅓ |
| 24 | 31 | 8 | 3 | 12 | 4 | 8 | 4 | 2 | 8 | 0 |

BUN DOUGH

| To produce Dough. | Water. | | Flour. | | Sugar. | | Eggs. | | Margarine. | | Yeast. | Milk. |
|----------------------|--------|----------|--------|-----|--------|-----|-------|---------|------------|-----|--------|-------|
| | lb. | qrt. pt. | lb. | oz. | lb. | oz. | doz. | single. | lb. | oz. | oz. | tins. |
| 10 | 1 | 0 | 5 | 0 | 0 | 15 | 0 | 5 | 0 | 11⅔ | 2½ | 1 |
| 11 | 1 | 0½ | 5 | 8 | 1 | 0½ | 0 | 5½ | 0 | 12⅝ | 2¾ | 1 |
| 12 | 1 | 0¾ | 6 | 0 | 1 | 2 | 0 | 6 | 0 | 14 | 3 | 1 |
| 13 | 1 | 0⅘ | 6 | 8 | 1 | 3½ | 0 | 6½ | 0 | 15⅙ | 3¼ | 1 |
| 14 | 1 | 0½ | 7 | 0 | 1 | 5 | 0 | 7 | 1 | 0⅓ | 3½ | 1 |
| 15 | 1 | 1 | 7 | 8 | 1 | 6½ | 0 | 7½ | 1 | 1½ | 3¾ | 1 |
| 16 | 1 | 1½ | 8 | 0 | 1 | 8 | 0 | 8 | 1 | 2⅔ | 4 | 1 |
| 17 | 1 | 1⅝ | 8 | 8 | 1 | 9½ | 0 | 8½ | 1 | 3⅝ | 4¼ | 1 |
| 18 | 1 | 1¾ | 9 | 0 | 1 | 11 | 0 | 9 | 1 | 5 | 4½ | 1 |
| 19 | 1 | 1⅝ | 9 | 8 | 1 | 12½ | 0 | 9½ | 1 | 6⅙ | 4¾ | 1 |
| 20 | 2 | 0 | 10 | 0 | 1 | 14 | 0 | 10 | 1 | 7⅓ | 5 | 1 |
| 21 | 2 | 0¼ | 10 | 8 | 1 | 15½ | 0 | 10½ | 1 | 8½ | 5¼ | 1 |
| 22 | 2 | 0⅔ | 11 | 0 | 2 | 1 | 0 | 11 | 1 | 9⅔ | 5½ | 1 |
| 23 | 2 | 0⅘ | 11 | 8 | 2 | 2½ | 0 | 11½ | 1 | 10⅝ | 5¾ | 1 |
| 24 | 2 | 0½ | 12 | 0 | 2 | 4 | 1 | 0 | 1 | 12 | 6 | 1 |
| 25 | 2 | 1 | 12 | 8 | 2 | 5½ | 1 | 0½ | 1 | 13⅙ | 6¼ | 1 |
| 26 | 2 | 1⅝ | 13 | 0 | 2 | 7 | 1 | 1 | 1 | 14⅓ | 6½ | 1 |
| 27 | 2 | 1⅝ | 13 | 8 | 2 | 8½ | 1 | 1½ | 1 | 15½ | 6¾ | 1 |
| 28 | 2 | 1⅘ | 14 | 0 | 2 | 10 | 1 | 2 | 2 | 0⅔ | 7 | 1 |
| 29 | 2 | 1⅝ | 14 | 8 | 2 | 11½ | 1 | 2½ | 2 | 1⅝ | 7¼ | 1 |
| 30 | 3 | 0 | 15 | 0 | 2 | 13 | 1 | 3 | 2 | 3 | 7½ | 1 |
| 31 | 3 | 0¼ | 15 | 8 | 2 | 14½ | 1 | 3½ | 2 | 4⅓ | 7¾ | 1 |
| 32 | 3 | 0⅔ | 16 | 0 | 3 | 0 | 1 | 4 | 2 | 5⅓ | 8 | 1 |
| 33 | 3 | 0⅘ | 16 | 8 | 3 | 1½ | 1 | 4½ | 2 | 6½ | 8¼ | 1 |

the shop or the customers, and it is quite evident that, however careful the counting may have been at all the stages, it is profitless unless the goods are ultimately placed on the customers' accounts. When the business is only a little one the needs of the case will be sufficiently met by keeping a book in which are entered all the goods sent out to the various customers. The check is more efficient if the prices of the several articles are noted also in the book, although it is not necessary to go beyond keeping all halfpenny articles together, all pennies together, and so with the others at separate prices.

There is considerable variation in different establishments as to the method of enumeration adopted. It is a mistake to count the goods in dozens in the bakery, then to enter them on the customers' invoices as so many shillings' worth, as this entails repeated conversions of money values into dozens, &c., if the invoices are to be used as part of the check system. It is much better to have the same method of counting through all the books. If local custom requires that prices only should be used on the invoices, then the bakers should also use the price rather than the number of articles. The great disadvantage of this is that it is impossible always to state the exact price of the quantity of articles made. Thus, if some article is sold at seven for 3*d.* if $\frac{1}{2}$ *d.* each, or seven for 6*d.* if 1*d.*, it would be quite correct to count all the odd ones at $\frac{1}{2}$ *d.* or 1*d.* respectively—five, for instance, would be 2 $\frac{1}{2}$ *d.* or 5*d.*—but it is obvious that if there were odd lots of all or many of the $\frac{1}{2}$ *d.* or 1*d.* articles made, the total price stated by the baker might be considerably more than could be realized for the goods, as they would all be sent out in even lots of 3*d.* or 6*d.*, what was short in one sort being made up from another. It is better to keep to number of articles all through, on customers' accounts as well, indicating either single numbers or dozens of the several kinds. This prevents all complications arising from different discounts to different customers, as the invoices simply give the number of goods at the various prices, and the discount is taken off the total at such a rate per shilling or per £. When the business is a large one doing a wholesale trade, the practice is to supply a detailed invoice to each customer, then the duplicates of these invoices are used for finding the total goods made. The invoices are best kept in books with every second leaf perforated. A carbon sheet is used, then, with a hard pencil, the quantities are written on the invoice to be sent to the customer, and of course duplicated on the one retained in the book for the use of the office. The form used for invoices should be a duplicate of the form used for ordering by the customers, as this makes comparison and checking easy. The following invoice form is readily adapted for use in the way suggested above:—

Methods of
Reckoning Goods.

Duplicate
Invoice Book.

LONDON BAKERY COMPANY

Date..... 190

| | doz. | s. | d. | | doz. | s. | d. | | doz. | s. | d. |
|-----------------------|------|----|----|-------------------------|------|----|----|-------------------|------|----|----|
| 4d. per doz. | | | | Vanilla Slices..... | | | | Bread | | | |
| | | | | Tea Cakes..... | | | | 2-lb. Plain..... | | | |
| | | | | | | | | 2-lb. Pan..... | | | |
| 6d. per doz. | | | | | | | | 2-lb. Fluted..... | | | |
| Afternoon Tea Scones | | | | 2s. per doz. | | | | 2-lb. Pistol..... | | | |
| Currant Buns..... | | | | Sausage Rolls..... | | | | 1-lb. Plain..... | | | |
| Oatcakes..... | | | | Scotch Pies..... | | | | 4-lb. Sandwich... | | | |
| Sponge Fingers..... | | | | Mince Pies "sweet"... |  |  |  | ..... |  |  |  |
| | | | | Napoleons..... | | | | 2-lb. Brown..... | | | |
| | | | | Fancy Pastry..... | | | | 1-lb. "..... | | | |
| 9d. per doz. | | | | | | | | | | | |
| Currant Buns..... | | | | | | | | 2-lb. Vienna..... | | | |
| Napoleons..... | | | | 3s. per doz. | | | | 1-lb. "..... | | | |
| Mixed Tarts..... | | | | Scotch Pies..... | | | | 2-lb. Coburg..... | | | |
| Banburys..... | | | | London Pies..... | | | | 1-lb. "..... | | | |
| Sponge Cakes..... | | | | Vienna Twists..... | | | | Vienna Rolls..... | | | |
| Cheese Cakes..... | | | | Tea Cakes..... | | | | Restaurant Rolls | | | |
| Albert Buns..... | | | | Currant Loaves..... |  |  |  | ..... |  |  |  |
| Tea Scones..... | | | | | | | | | | | |
| Queen Cakes..... | | | | | | | | | | | |
| Custards..... | | | | | | | | | | | |
| Coburg Cakes..... | | | | Sundries | | | | Summary | £ | s. | d. |
| Alexandras..... | | | | 6d. Victoria Sandwiches | | | | 4d. per doz..... | | | |
| Swiss Pastry..... | | | | 6d. Tart Cases..... | | | | 6d. "..... | | | |
| Cocoanut Rings..... | | | | 10d. per lb. Swiss-Roll | | | | 9d. "..... | | | |
| | | | | 1s. German Tarts..... | | | | 1s. "..... | | | |
| 1s. per doz. | | | | 1s. Swiss Tarts..... | | | | 2s. "..... | | | |
| Cream Rolls..... | | | | | | | | 3s. "..... | | | |
| " Horns..... | | | | | | | | Sundries..... | | | |
| " Puffs..... | | | | | | | | Cake..... | | | |
| " Éclairs..... | | | | | | | | | | | |
| Meringues..... | | | | Cake |  |  |  | ..... |  |  |  |
| Shortbread, Scotch... | | | | 6d. Cakes..... | | | | Plain Bread..... | | | |
| " German.. | | | | 1s. "..... | | | | Fancy "..... | | | |
| Fancy Pastry..... | | | | Block } 8d. per lb. |  |  |  | ..... |  |  |  |
| Almond Pastry..... | | | | Cakes } 10d. " |  |  |  | ..... |  |  |  |
| Lemon Cheese Cakes | | | | | | | | | | | |
| Almond " " | | | | | | | | | | | |
| Scotch " " | | | | | | | | | | | |
| Macaroons..... | | | | | | | | | | | |
| London Buns..... | | | | | | | | | | | |
| Coffee Slices..... | | | | | | | | | | | |

After the goods for the day are all despatched, the invoice books, with the summary made out, are used to supply all details for the checking of the day's baking. For this purpose a specially ruled Summary Book. book is required. The form on p. 403 shows the actual details of one day's sales of a considerable business with a mixed trade.

CHECKING SUMMARY OF ONE DAY'S SALES OF LARGE BAKERY WITH MIXED TRADE

Date.....

| Price. | Shops, &c. | | | Vans. | | | Wholesale. | | | Factory Sales. | | | Total Pastry. | | | Total Bread. | | |
|-----------------|-----------------------|--------|---------|--------------|------------------|--------|------------|--------------|-------------------|----------------|----------|--------------|----------------------|---------------|-------|--------------|-------------|--|
| | Quantities. | Value. | | Total Value. | Quantities. | Value. | | Total Value. | Quantities. | Value. | | Total Value. | Quantities. | Total Pastry. | | Total Bread. | Quantities. | |
| | | £ | s. d. | | | £ | s. d. | | | £ | s. d. | | | £ | s. d. | | | |
| 4d. per doz. | Doz. 121 6 | 2 | 0 6 | | 8 2 | 0 | 2 9 | | 12 | 0 | 4 0 | | 2 | 7 11 | | | | |
| 6d. " " | 368 6 | 9 | 4 3 | | 30 | 0 | 15 0 | | 65 6 | 1 | 12 9 | | 143 9 | 11 14 10 | | | | |
| 9d. " " | 59 2 | 2 | 4 4 1 2 | | 3 8 | 0 | 2 9 | | 27 10 | 1 | 0 10 1 2 | | 469 8 | 3 12 6 | | | | |
| 1/ " " | 53 6 | 2 | 13 6 | | 6 | 0 | 0 6 | | 20 3 | 1 | 0 3 | | 96 8 | 3 19 1 | | | | |
| Sundries..... | S. Price. 6 5 1 1 1 2 | | | | S. Price. 0 19 4 | | | | S. Price. 0 12 11 | | | | S. Price. 8 1 10 1 2 | | | | | |
| Cake | S. Price. 3 8 3 | | | 25 16 0 | S. Price. 0 11 8 | | | 5 4 9 1 2 | S. Price. 0 14 0 | | | 0 18 4 | S. Price. 4 14 11 | | | | | |
| Bread (Plain). | Single. 339 | 2 | 16 6 | | Single. 901 | 8 | 8 11 1 2 | | Single. 237 | 1 | 19 6 | | Single. 31 | | | 1508 | 13 10 1 1 2 | |
| Bread (Fancy) | 350 1 2 | 4 | 7 7 1 2 | | 349 | 4 | 7 3 | | 145 1 2 | 1 | 16 4 1 2 | | 5 1 2 | | | 850 | 10 12 7 1 2 | |
| Rolls (Doz.)... | 13 1 4 | 0 | 5 8 1 2 | | 9 | 0 | 4 6 | | 18 8 | 0 | 9 3 | | ... | | | 41 | 0 19 5 1 2 | |
| | | | | 7 9 10 | | | | 4 5 1 1 2 | | | | 0 6 6 1 2 | | | | | | |
| | | | | 33 5 9 1 2 | | | | 9 9 11 | | | | 1 4 10 1 2 | | | | 25 | 2 2 1 2 | |

Note.—Single pieces are marked by a line underneath the figures, thus 6 denotes 6 pieces.
S. Price means Selling Price.

The same books of duplicate invoices are used to supply details for the analysis of the business in the Day Book (p. 405), which will be the source from which customers' accounts will be posted into the general ledger.

A reference to the specimen summary of a day's sales will show that the ruling and method of summarizing are designed to be self-checking. The dozens at the several prices should be the same as the quantities received in the store, and, of course, the same as the quantities made by the bakers. In any case the quantities on this daily summary are all that can be reckoned on as profit-producing. The total number of articles at the respective prices, calculated by itself, should exactly correspond to the addition of the money values against these articles, added along the line from left to right. The total of the summary should also correspond to the addition of the totals of the respective articles added from left to right. The nature of the business done, the variations in the different sections from day to day, and the kind of business done (whether cheap or high-priced goods are selling best), can also be seen at a glance in a summary prepared in this way. Some indication is also given of the profitableness of the trade, since it is possible to calculate the discounts which are allowed on each class of business—wholesale, vans, or the firm's shops—and so arrive roughly at the net amount actually obtained against the manufacturing costs.

Some idea has been already given of the manufacturing costs on bread, but it is not so simple a matter to give details for confectionery and small goods. In a small bakery one man is doing so many different things, that unless costs are worked out on a time sheet for each individual article, as is the custom in building trades, it is impossible to obtain labour costs for even a class of goods. In large factories, however, the work is more or less specialized. The same men keeping to the same class of work all the time, it is possible to get some idea of the labour cost of the different articles, and some degree of accuracy is obtained by making broad divisions of the work and estimating on the basis of a period of a week at least. On p. 406 is an actual estimate made as above of a large factory producing from £400 to £500 worth of small goods per week. The division of the work marked "Pies" includes all sorts of pies and tarts; that marked "Buns, &c.", includes scones and buns of all sorts, baked in the oven as well as on hot plates; "Cake and Confectionery" includes large and small cakes, and all fondant and decorative work; "Pastry, &c.", includes all sponge goods, meringue work, and all sorts of ordinary pastry. Four consecutive weeks are shown here, and the very slight variations in cost of labour may be considered as remarkable. These variations are in some cases due to the staff of workmen being constant, and wages, therefore, through the whole period are the same, while there are considerable variations week by week in the amount of business done. But part of the differences is due to a larger proportion of the business one

| | | | | | | | | | | | | | | | | | | |
|-----------------------------------|----------------|--------------|-------------|-----------|--------|----------------------------|--------------|--------------|--------------|--------------------|---|---------------------|--------------------|--------------|-----------------------|---------------|----------------|---------------|
| Date..... | Invoice No. | | | | | | | | | | | | | | | | | |
| Name. | CONFECTIONERY. | | | | | | BREADS. | | EXTRAS. | | TOTAL. | ACCESSORIES. | | RETURNS. | | | | |
| | 6d. per Doz. | 9d. per Doz. | 1/ per Doz. | Sundries. | Cakes. | Total Value Confectionery. | Plain Bread. | Fancy Bread. | Rolls (Doz.) | Total Value Bread. | Extra Goods. | Total Value Extras. | Grand Total Value. | Accessories. | Value of Accessories. | Dr. Folio No. | Total Returns. | Cr. Folio No. |
| Shops (Firm's)..... | | | | | | £ s. d. | | | | £ s. d. | Tea..... Coffee .. Lemon-ade..... &c. &c. | £ s. d. | £ s. d. | | £ s. d. | | £ s. d. | |
| | | | | | | | | | | | | | | | | | | |
| Vans..... | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Shops (Wholesale Customers) | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| Mr. (private) | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Specimen page of "Day Book" for Mixed Business.

week being of a higher-priced kind than in another week, for although the ideal condition of things would be to secure the same proportion of profit for all goods, and to expend the same value in labour on all alike, this in practice is found impossible.

COST FOR LABOUR OF SMALL GOODS

| WEEK ENDING 6TH MAY | | | | | WEEK ENDING 20TH MAY | | | | |
|------------------------|-----|-----|-----|----------------|-------------------------|-----|-----|-----|----------------|
| Pies | ... | ... | ... | 1/3½ in the £. | Pies | ... | ... | ... | 1/3 in the £. |
| Buns, &c. | ... | ... | ... | 1/0¾ " " | Buns, &c. | ... | ... | ... | 1/0½ " " |
| Cake and Confectionery | ... | ... | ... | 1/0½ " " | Cake and Confectionery | ... | ... | ... | 1/1¼ " " |
| Pastry, &c. | ... | ... | ... | 1/4¾ " " | Pastry, &c. | ... | ... | ... | 1/4 " " |
| WEEK ENDING 13TH MAY | | | | | WEEK ENDING 27TH MAY | | | | |
| Pies | ... | ... | ... | 1/3¾ in the £. | Pies | ... | ... | ... | 1/2½ in the £. |
| Buns, &c. | ... | ... | ... | 1/0¼ " " | Buns, &c. | ... | ... | ... | 1/ " " |
| Cake and Confectionery | ... | ... | ... | 11¾d. " " | Cake and Confectionery | ... | ... | ... | 11¾d. " " |
| Pastry, &c. | ... | ... | ... | 1/3½ " " | Pastry, &c. | ... | ... | ... | 1/3¼ " " |
| AVERAGE FOR THE MONTH | | | | | | | | | |
| Pies | ... | ... | ... | ... | 1/3¼ in the £ (nearly). | | | | |
| Buns, &c. | ... | ... | ... | ... | 1/0¼ " " | | | | |
| Cake and Confectionery | ... | ... | ... | ... | 1/0¼ " " | | | | |
| Pastry, &c. | ... | ... | ... | ... | 1/3¾ " " | | | | |

Hitherto only the gross costs and charges on all goods have been considered, but when economies are to be effected it is in the details of the individual recipes that this has to be done. It is not possible, or, at least, it would be too troublesome and expensive, to work out these details each day, but it is necessary to do so from time to time for each separate class of goods. But in a well-organized bakery it is part of the ordinary routine work of the office to keep a check on the prime cost of material, on the gross produce as ascertained by methods indicated above, and to work out the relations these two factors bear to each other. The foreman should be supplied with these details from time to time as an incentive to keep him watchful and careful that the materials are not wasted, and that the gross profit does not drop too low. The words gross profit, as used here, are intended to indicate the difference between the selling price of the article and the cost of materials *only*. There is a difference in practice in the trade in estimating percentage of gross profit; if the selling price is exactly double the cost of materials, some would call the gross profit 100 per cent, because they calculate it on the materials; but since there can be no profit whatever until the goods are sold, the profit should evidently not be calculated in relation to the cost of materials, but in relation to the selling price of the article. Thus, if an article is sold at just double the price of the materials, then the gross profit should be given as 50 per cent. This latter method of calculation

is followed in all the figures given here. It is an old-time ideal that on small goods the gross profit, to make the business pay sufficient, should never be less than 50 per cent. It is to be feared that the stress of competition makes this figure too high in some cases, but it is still possible in others to keep well up to the mark. The following are figures relating to the groups of goods given above, but dealing with materials and selling prices only:—

| | May 1st. | May 8th. | May 15th. | May 22nd. | Average: 4 Weeks. |
|----------------------------|-----------|-----------|-----------|-----------|----------------------|
| | per cent. | per cent. | per cent. | per cent. | per cent. |
| Buns..... | 59·6 | 48·92 | 57·48 | 52·48 | 54·62 |
| Cake and Confectionery.... | 50·08 | 47·29 | 45·26 | 47·22 | 47·46 |
| Pastry, &c..... | 54·73 | 55·46 | 53·55 | 51·43 | 53·79 |
| Pies, &c..... | 56·63 | 48·48 | 53·72 | 57·40 | 54·05 |

There are great variations here that seem difficult to reconcile with careful practice, yet these figures are taken from practical work that was careful. The variations really occur because some work that is very profitable is grouped with other work much less so, and if in any week there is a big proportion of the profitable work in any group done, the gross profit for the week for that group will be very high, to be correspondingly low when the opposite conditions obtain. These calculations are therefore only valuable as rough guides to the value of the business done, and require to be carefully analysed from time to time and the recipes for each separate kind or article carefully worked out. The following list of material costs and gross product profit is taken from a computation made as above from actual working operations in a large bakery:—

| Name of Goods. | | | Cost of Material. | Gross Profit over Materials only. | |
|--------------------------|-----|-----|-------------------|--------------------------------------|------|
| | | | Per cent. | Per cent. | |
| Small tea scones | ... | ... | 24·2 | ..... | 75·8 |
| London buns | ... | ... | 52·8 | ..... | 47·2 |
| Yeast goods (plain) | ... | ... | 25·0 | ..... | 75·0 |
| Dough nuts | ... | ... | 42·7 | ..... | 57·3 |
| Drop scones | ... | ... | 28·0 | ..... | 72·0 |
| Tea scones | ... | ... | 50·5 | ..... | 49·5 |
| Albert buns | ... | ... | 50·3 | ..... | 49·7 |
| Coburg cakes | ... | ... | 40·4 | ..... | 59·6 |
| Scotch shortbread | ... | ... | 48·3 | ..... | 51·7 |
| German shortbread | ... | ... | 60·0 | ..... | 40·0 |
| Hotplate seones | ... | ... | 36·1 | ..... | 63·9 |
| Brown scones | ... | ... | 49·1 | ..... | 50·9 |
| Madeira eake | ... | ... | 58·9 | ..... | 41·1 |
| Slab cake at 8 <i>d.</i> | ... | ... | 66·6 | ..... | 35·4 |
| Slab eake at 6 <i>d.</i> | ... | ... | 73·3 | ..... | 26·7 |
| Almond pastry... | ... | ... | 40·7 | ..... | 59·3 |
| Victoria sandwich | ... | ... | 50·36 | ..... | 49·6 |
| Cinnamon biseuits | ... | ... | 54·5 | ..... | 45·5 |

There is an advantage in calculating cost of material and gross profit in percentages; the gross profits can then be compared readily with each other, and any one can be compared with the total gross profit from the whole of the goods. It is unlikely that any reader is unfamiliar with the method of finding what percentage of the total product from a mixing is **How to Calculate** the cost of material; but for the benefit of the few who **Percentage Profits.** have not hitherto worked out percentages the matter is explained here. Suppose that from a mixing of sponge sandwiches the total product given at the selling price is 15s., and that the whole of the materials to make this cost 8s.; then material is to produce as 8 is to 15, or in other words the material is $\frac{8}{15}$ the value of the goods produced.

This proportion is the same for any quantity whatever, and it is therefore right for 100s. worth or £100 worth. The percentage is therefore found by finding what $\frac{8}{15}$ of 100 is; thus $\frac{8 \times 100}{15} = \frac{800}{15} = 53\cdot3$ per cent.

But it is evident that if the material costs 53·3 per cent of the selling price, then the gross profit can only be the amount required to make up 100—in this case 46·7 per cent. When the cost of material works out in odd pence the calculation is a little more difficult, but only because the figures used are larger. Thus, suppose the cost of material in the case given above comes to 8s. 2d., it is then necessary to reduce the whole to pence, and at the same time to reduce the value of the produce to pence. This is done so that two whole numbers can be obtained that may have a simple ratio to each other; but if the material worked out to 6d. or 4d. or 3d. while the produce was in whole shillings, it would only be necessary to obtain the figures for the ratio to reduce both to sixpences, or fourpennies, or threepennies respectively. In the case now considered, however, the simplest plan is to reduce the values of materials and produce to pence. Thus 8s. 2d. is 98, and 15s. is 180 pence. The value of the materials therefore bears the relation to the value of the produce of 98 to 180, and the percentage is found as before by taking $\frac{98}{180}$ of 100 as that of the material: $\frac{98 \times 100}{180} = 54\cdot4$ per cent. The gross profit is again the difference between this and 100, or 45·6 per cent.

It would be a needless worry and irritation to work out the percentage profit for each class of goods every day, or even every week; but it is wise **Kind of Goods** to make a practice of working out one or two each week **Varies Profits.** until all the goods are gone over in succession, and comparing results with those previously obtained. For the use of the manager or the head of a department some record should be kept from week to week of the nature of the goods most in demand. Such a record is sometimes the best clue to an increase or decrease of the gross profit on the whole of the work, which would seem otherwise unaccountable; but it is possible in the case of decreasing profits, and knowing exactly where they

are, to devise some plan of introducing new goods that are more profitable, or otherwise creating a demand for the more profitable articles, to prevent a loss becoming permanent. The list of costs and gross profits given above shows how variable the latter may be on different goods, and how, with the same turnover in any two weeks, the actual profit made may vary by a considerable amount.

Variable
Gross Profit
Accounted for.

Whatever bookkeeping may be required from the actual workers, the master or manager of a bakery cannot be too well posted in the details of the manufacturing part of the business, for the possibilities of leakage are great and very difficult to discover.

In any scheme of management of a bakery everything possible should be done to systematize the work, so that as little as possible depends on the thoughtfulness of individuals at the moment; in other words, routine is of the greatest importance. It is always a recurring point in bakery management whether the work should be done on a time or a piecework basis. The workmen, as a rule—at least the trades unions—favour a time system, while the feeling of the masters is more towards piecework.

Time versus
Piecework.

It is possible that the bad odour in which piecework is held in the bakers' and confectioners' unions may be in great part due to the dislike attending it amongst unionists in the mechanic trades. In some of these piecework has been the means of pandering to the greed of some workmen, who would speed themselves up far above the normal rate to secure as large a share as possible of the whole work and the whole wages. In the baking trade what is called piecework does not tend to this trouble; it is rather in the nature of what is called task work. The amount of work to be done is apportioned so that each man is debited with a certain quantity against the regular amount of wages paid; and if there is more to be done than the aggregate toll for the men employed, casual hands are taken on against the excess work, or the payment for the excess is divided *pro rata* amongst the regular hands.

Excess Work
Divided.

In the writer's opinion this is the fairest method of payment for both masters and men. In connection with breadmaking it may readily happen that accidents, due perhaps to the carelessness of one of the workmen, may occur to prevent the work being done in the usual time, although its amount may be actually less than the normal. In such circumstances it is a hardship on the employer if he has more wages to pay although he gets less profit. Assuming that the appliances provided are sufficient, it is best to come to some definite understanding with the men as to the amount of work to be done per man, whether bread or confectionery, and to pay on such basis. The figures given above may serve as a rough guide for the adoption of a reasonable standard to go by. But in addition to this standard to measure earnings, it is always best to have precise regulations as to the time of starting and stopping work. The men will readily see to the stopping time, and the employer should be particular as to the starting; for a good start and the impetus created in the first hour generally

Importance of
Rules for
Starting Work.

determine the rate at which the work is to be carried on for the whole day or night.

In some cases a strict regulation may be sufficient to ensure a start being made by all the men at the proper time, but it is possible by a system of fines to make the men their own timekeepers and to enlist their active co-operation in securing a good start at the proper time. The fines can be graduated so that a small amount has to be paid for a few minutes late, and a gradually increasing amount, as well as an increasing rate of payment, if the man is much late. The essence of the system, however, consists in dividing the fines thus obtained amongst the men themselves. The fairness of the plan robs it of all appearance of hardship; and although

Fines as the late ones are no fonder of paying fines than they would
Incentive to be in any other circumstances, the knowledge that they go to
Good Time. those who actually do the work, and that the loser one day
may be the gainer another, softens the impost. The master gains nothing

from fines so imposed except the prompt start and the initial impetus already referred to, and the importance of these needs no emphasizing. It is, however, equally important that the employer or manager should do nothing himself likely to hinder a smart start. The writer has had some experience of more than one case where a good deal of slackness was

Orders Ready occasioned at the beginning of the day's, or rather night's,
at Start work on account of the men not knowing for an hour or
of Work. two after starting, the quantities of the respective kind of
goods they had to make; and it would really have been more profitable
for the employers and more comfortable for the men if the start had been
made an hour or so later so that the full list had been ready at the begin-
ning.

In very large establishments it is common now to have a regular
Timekeeper and timekeeper, who has charge of a large board with num-
Check System. bered discs, one for each man employed. As the man
enters the gate he has to register his name and receive his check, which
he hangs on his own peg on the board. He must not leave without taking
off his check and handing it to the gatekeeper. A look at the board at
any time is therefore sufficient to inform the manager who is at work and
who absent. In smaller establishments, where the staff is not large enough
to make it profitable to employ a gatekeeper, there are several sorts of
automatic registers on the market that serve as timekeepers. In one of

Time-recording these with which the writer is familiar each man as he
and Checking enters takes a card from the rack on which his name is
Clocks. written and inserts it in a slot of a recording machine.

This machine stamps on it the date and the exact time the record is made. The card is then replaced in the rack, and the hour of stopping work is recorded on it in the same way. The same card is used for a week's record, and on the times recorded on this card the man's wages are paid. This system is of course only available when the men are working on time.

The variableness of the trade from day to day causes a good deal of trouble to the employer or manager, and to get over this difficulty the largest establishments have long adopted the plan of keeping a comparatively small permanent staff and making up the requirements in the matter of labour by employing casuals or jobbers. In some of the large cities this plan has been carried rather to excess by employing these casual men for only half a day at a time, with the result generally of creating a whole class of very poor workers, who hardly earn enough to keep themselves in that state of cleanliness and respectability proper for those who handle bread and confectionery in its raw state. This method is fortunately much less in favour than it was a few years ago. It should be sufficient for an employer to have his work done according to a definite "log", so that the men would take their share of the losses when trade is slack and share in the gains when it is brisk.

Having now gone into details of the cost of manufacture and the percentage and gross returns from the several departments, it is necessary, if sharp control is to be exercised, that the proprietor or manager should have a correct view of the whole transactions of the business at very short intervals, say of not more than one week. This summary is quite apart from the balance of profit and loss to be made up from the general books of the firm at six months' or twelve months' intervals, but can be compiled with very little trouble from the data relating to manufacture, &c., already given, and afford a general statement of transactions to serve as indicator of the direction in which the affairs of the business are tending. To this end a sample form for a business of 60 sacks and £80 confectionery per week is here shown.

BREAD MANUFACTURING ACCOUNT—WEEK ENDING.....19...

| | £ | s. | d. | | £ | s. | d. |
|-----------------------------------|-----|----|----|---------------------------------------|-----|----|----|
| Materials | 79 | 10 | 0 | Goods produced at selling price | 117 | 10 | 0 |
| Wages of Manufacture... | 8 | 6 | 0 | Cash realized for Stale..... | 0 | 16 | 8 |
| Fuel | 1 | 10 | 0 | | | | |
| Vanmen's Returns..... | 1 | 0 | 10 | | | | |
| Gross Profit on Manufacture | 27 | 19 | 10 | | | | |
| | 118 | 6 | 8 | | 118 | 6 | 8 |

CONFECTIONERY MANUFACTURING ACCOUNT—WEEK ENDING.....19...

| | £ | s. | d. | | £ | s. | d. |
|-----------------------------------|----|----|----|---------------------------------------|----|----|----|
| Cost of Materials | 40 | 0 | 0 | Goods produced at selling price | 81 | 0 | 0 |
| Wages of Manufacture ... | 6 | 3 | 0 | Cash realized for Stale..... | 1 | 5 | 0 |
| Fuel | 0 | 18 | 0 | | | | |
| Stale Returns | 3 | 0 | 0 | | | | |
| Gross Profit on Manufacture | 32 | 4 | 0 | | | | |
| | 82 | 5 | 0 | | 82 | 5 | 0 |

GENERAL ACCOUNT—WEEK ENDING19...

| | £ | s. | d. | | | £ | s. | d. |
|--|-----|----|----|--|---|-----|----|----|
| Materials — Bread and Confectionery | 119 | 10 | 0 | | Goods produced — Bread and Confectionery..... | 198 | 10 | 0 |
| Wages of Manufacture... | 14 | 9 | 0 | | Realized for Sale..... | 2 | 1 | 8 |
| Fuel | 2 | 8 | 0 | | | | | |
| Machinery—Power, Repairs, &c. | 1 | 12 | 0 | | | | | |
| Storeman and Packer | 1 | 8 | 0 | | | | | |
| Delivery Vanmen, &c. | 5 | 10 | 0 | | | | | |
| Horses | 3 | 15 | 0 | | | | | |
| Office Staff..... | 2 | 7 | 0 | | | | | |
| Shops — Wages..... | 2 | 18 | 0 | | | | | |
| Manager..... | 4 | 0 | 0 | | | | | |
| Rents (Factory, Shops)... | 6 | 0 | 0 | | | | | |
| Rates and Taxes | 2 | 10 | 0 | | | | | |
| Telephone, &c. | 0 | 10 | 0 | | | | | |
| Gas (Lighting)..... | 1 | 10 | 0 | | | | | |
| Stationery and Incidentals | 2 | 10 | 0 | | | | | |
| Returns Stale (Bread and Confectionery)..... | 4 | 0 | 10 | | | | | |
| Bad Debts, &c..... | 1 | 0 | 0 | | | | | |
| Insurances | 1 | 5 | 0 | | | | | |
| Advertising | 1 | 0 | 0 | | | | | |
| Interest on Capital..... | 2 | 0 | 0 | | | | | |
| Net Profit per Week..... | 20 | 8 | 10 | | | | | |
| | 200 | 11 | 8 | | | 200 | 11 | 8 |

It would be a good and profitable business to which a trade of 60 sacks of bread and £80 worth of small goods was attached. Such a trade might be easily conducted in a bakery rented say at £130, with two shops, one at £100, the other at £82. As the bulk of the bread would be delivered, not less than three horses would be necessary. As confectionery would include cake, a foreman at £2, 10s., two men at 30s. each, and a boy at 13s. would be about a sufficient staff; while for bread, as machinery would be available, a foreman at say £2, 10s. per week, a second hand at £1, 12s., two men at £1, 10s., and another young man at £1, 4s., would be ample help, one of the men being available part of the time for delivery in the neighbourhood. It is well in a business of this size to keep a storeman, who would also assist with packing. A clerk and assistant would be necessary in the office, at least two attendants in each shop, and a manager to overlook the whole, or, if the proprietor were his own manager, he would be entitled to the manager's salary in addition to the ordinary profits of business. The assumption is made that if bread is sold at 5d. per four-pound loaf, the flour should not cost more than 25s. per sack, yeast, salt, and yeast food being responsible for another 1s. 6d. per sack. To keep proper grip of the details of the business a weekly balance may be made in the above form, the gross profits of the two departments of bread and confectionery being first shown, then the net profit on the whole week's business. The separate manufacturing accounts do not deal with items such as share of rent, power, office work, selling, &c., but only with those that can be definitely allocated to the respective departments, all the other joint items being placed in the

general account. In the latter such matters as rent, taxes, insurance, &c., can be definitely ascertained in proportion for the week, but such as bad debts, stationery, advertising, &c., can only be ascertained by taking averages for a year, and dividing by 52. If accounts like this are kept it is impossible for business to get out of hand.

CHAPTER LIX

DISTRIBUTION BY VANS

The difficulties and the expense attending the manufacture of bread and confectionery are much less than those pertaining to the disposal of the finished products. The goods are to some extent perishable, Expense of or at least deteriorate in value very quickly. They are of Distribution. comparatively small value in relation to weight and bulk, and in consequence the cost for distribution bears a high ratio to the total value of the goods. The simplest and not the least satisfactory method of selling is over the counter in a shop, and, if possible, for cash. But this method is, unless in very favourable circumstances, quite expensive, and the tendency has been growing for many years towards door-to-door distribution, especially with regard to bread. This is natural on the part of the public because bread is bulky, but very expensive to the baker because bread is cheap and profits are small. For small and fancy goods the shop is likely to remain the best emporium, because customers prefer to have a choice of many varieties when making purchases, and these goods, on account of their friability, are not suitable for sending round on approbation with a van. The writer has had experience of many attempts to create a demand amongst van customers for small goods, but never with any reasonable degree of success. The pieces lose their appearance of freshness when carried about in boxes or baskets, and are therefore much less enticing when offered in that way than when nicely displayed on suitable trays in a shop, and the variety in a shop can also be greater. The special circumstances referred to above in which shop sales are best for the baker are in neighbourhoods where there is a large working-class population and where rents are comparatively low. In smaller towns the baker is generally a corn chandler, and as the two sorts of business fit well together, the rent of shop and other charges become light on each; sometimes the grocer-baker finds the bread trade the mainstay of his shop for the same reason. In many large English towns some of the bakery firms have a great many bread shops, from which they also supply flour and other goods sold by corn chandlers. In some districts the practice is to sell the bread at wholesale prices to chandlers, dairymen, or grocers, and these retail to the consumer. In some parts of Holland a very novel method of distribution obtains. The bread-sellers keep their own vehicles, and go to the factory

and buy what bread they require day by day for their shops and the private customers they serve.

It is customary in the trade to rail at grocers, hucksters, dairymen, and others who act as middlemen in the sale of bread, as if they were the special enemies of the bakers who serve them, but if bakers would only take pains to know at what they can profitably sell bread, and would refrain from excessive and unprofitable competition with each other, these middlemen may well afford the cheapest means of distributing their bread at least to the consumer. One advantage of the wholesale trade is that the distribution charges to the baker are much smaller than when he serves private customers direct, even when the discount to the reseller is reckoned; this at least is true when the wholesale customers take reasonably large quantities. If they take only a few loaves each per day, as in the case of some of the small shops and dairies in London, they may be quite as expensive to serve as private customers. The saving in the wholesale trade is due solely to the much larger quantities that may be distributed by one horse and one man. Economy is secured for the same reason when the customers are near each other. It is very difficult to say what the selling possibilities of one man should be with a single horse, but it is evident that the wider his "round" is, and the more scattered his customers, the less his sales are likely to be, and the proportion of charges to sales will thereby be increased. Thus, assuming that the total upkeep of a horse is 25s. per week—and after all charges are paid it is not, as a rule, much less—and that the vanman is paid 32s. per week, then with 5s. for insurance and repairs, &c., the total cost for delivery, if the man sells about 12 saeks per week, or 2256 2-lb. loaves, is a little over a farthing on each 2-lb. loaf, or, roughly, 4s. 8½d. per saek. This estimate of cost is by no means excessive. It seems evident, therefore, that the charges for distribution are about double those for manufacture. There is no rule in the matter, since the amount a man sells must depend on the nature of his customers, on his own energy, and on the area over which his round spreads; then as the cost for horse and man is about the same whether much or little is sold, the van with the smallest trade costs most for distribution. In the case of large businesses, where the quantity of products necessitates their sale over a very wide area, much of it a long distance from the central factory, the general experience is that in those outlying districts the firm's influence seems to become very slight and the customers are very thinly distributed, which condition makes for expensive distribution.

Local custom determines to a considerable extent the method of distribution and therefore the cost. Not many years ago, in nearly every Scottish town, the greater part of the bread was delivered either to shops or private customers from boards, one man being capable of carrying five to five and a half dozen at once, a weight roughly of about 160 lb. About the same period the custom in English and Irish towns was to deliver a great deal of the bread from large baskets

carried on the shoulders. As the men or boys who delivered the goods were also bakers, and only filled in afternoons at delivery, the cost of this method was comparatively low. The method of carrying was superseded by that of using handbarrows. This method still obtains in the smaller towns, but in large towns, except in London, has been almost superseded by horse and van. In London the barrow is a strongly established institution, and it is no uncommon thing to find businesses with trades of fifty or sixty saeks per week distributing the whole by barrows. A trade of this kind is wholly within small compass. Customers are close together, and a good barrowman may readily sell as much as another man with a horse and van. The custom where only barrows are employed is to engage a few men exclusively for this work, who take the largest rounds farthest away from the shop, but the barrows serving near customers are taken by youths who assist part of the time in the bakery and finish on the round. Nowhere but in London and places directly under the London influence would it be possible to get a man to push a barrow about the street serving bread, but in London the practice is so common that no one takes notice; the persistence of the method there is no doubt in part due to the cramped nature of many of the bakers' premises and the difficulty of securing convenient stables. Next to the method of selling over the counter, that of distribution by barrows is the cheapest that may be adopted. The wages of barrowmen, who in most cases are full grown, and in many instances married men, vary very considerably. The average may be taken as about 26s. per week, although some firms readily pay 30s. or more to good men, while others think about 14s. per week is enough. As these barrowmen have to collect weekly accounts as well as deliver bread, it is not surprising that, particularly amongst the poorly paid ones, there is a good deal of trouble with petty thefts and embezzlements. There is usually an understanding with barrowmen or vanmen that a small commission, generally a shilling, is paid for each new customer obtained who remains a constant customer of the firm for at least one month. This acts as an incentive to deliverers to look for new customers, and as in London removals are very frequent, the bakers, milkmen, and others quite besiege a new-comer to any house.

With big firms, both barrowmen and vanmen are paid only very small standing wages, just sufficient to constitute them paid servants, and receive the remainder as commission on sales only. The objects, of course, are to keep the deliverers in a state of anxiety to increase their wages by larger sales and at the same time to make the cost for selling bread, &c., nearly uniform over the whole of the firm's output. On the top of the regular percentage to vanmen it is sometimes necessary to offer special inducements to exceptionally good men to keep them in the employ of the firm. This may be done by either increasing the standing wage of such men or by paying them a higher rate of commission on what they sell. As there is a limit to the area a man can cover on his round, a very good salesman may have part of his round taken from him and

made the nucleus of a new round for another man, and in circumstances like these it is necessary either to increase the man's wages or increase the rate of commission on all the sales he makes on the part of the round left to him. This arrangement is generally quite satisfactory to the men and to the firm. It can be readily understood that the rate of commission for bread, &c., sold from a barrow must be a little higher than the rate paid when the firm have to keep a horse in addition, although the greater volume of sales in the latter case is some compensation for the greater cost to the firm. As an example of how the method of wages and commission works, the following tables, actually in use by a large firm, may be interesting:—

WAGES AND COMMISSION OF BARROWMEN

| Value of Goods Sold. | Rate of Commission. | Amount of Commission. | Fixed Wages. | Total Remuneration. |
|-------------------------|------------------------|--------------------------|--------------|------------------------|
| £ | s. d. | £ s. d. | s. | £ s. d. |
| 6 | 1 4 per £ | 0 8 0 | 5 | 0 13 0 |
| 7 | " " | 0 9 4 | 5 | 0 14 4 |
| 8 | " " | 0 10 8 | 5 | 0 15 8 |
| 9 | 1 5 " | 0 12 9 | 5 | 0 17 9 |
| 10 | " " | 0 14 2 | 5 | 0 19 2 |
| 11 | " " | 0 15 7 | 5 | 1 0 7 |
| 12 | 1 6 " | 0 18 0 | 5 | 1 3 0 |
| 13 | " " | 0 19 6 | 5 | 1 4 6 |
| 14 | " " | 1 1 0 | 5 | 1 6 0 |
| 15 | 1 7 " | 1 3 9 | 5 | 1 8 9 |
| 16 | " " | 1 5 4 | 5 | 1 10 4 |
| 17 | " " | 1 6 11 | 5 | 1 11 11 |
| 18 | " " | 1 8 6 | 5 | 1 13 6 |
| 19 | 1 8 " | 1 11 8 | 5 | 1 16 8 |
| 20 | " " | 1 13 4 | 5 | 1 18 4 |
| 21 | " " | 1 15 0 | 5 | 2 0 0 |
| 22 | 1 9 " | 1 18 6 | 5 | 2 3 6 |
| 23 | " " | 2 0 3 | 5 | 2 5 3 |
| 24 | " " | 2 2 0 | 5 | 2 7 0 |

Tables drawn out in this form and hung up in a suitable place in the packing room, where the vanmen can refer to them, may readily serve as a strong stimulus to make them strive to get their sales up so that they may have their commission calculated on an increased rate. Some little latitude has to be allowed in interpreting such a table, and when a man has succeeded by hard work in getting his sales up to say £25 and his commission calculated on that basis, he would still be allowed the same rate of commission although his sales for a few weeks had been reduced below the £24 limit.

In connection with small businesses the vanmen are not, as a rule, held responsible for bad debts, the firm taking responsibility for all outstanding accounts, but the desire to get into the employ of the larger firms is so keen that men are willing to take

WAGES AND COMMISSION OF VANMEN

| Value of Goods Sold. | Rate of Commission. | Amount of Commission. | Fixed Wages. | Total Remuneration. |
|-------------------------|------------------------|--------------------------|--------------|------------------------|
| £ | s. d. | £ s. d. | s. | £ s. d. |
| 9 | 1 4 per £ | 0 12 0 | 5 | 0 17 0 |
| 10 | " " | 0 13 4 | 5 | 0 18 4 |
| 11 | " " | 0 14 8 | 5 | 0 19 8 |
| 12 | 1 4½ " | 0 16 6 | 5 | 1 1 6 |
| 13 | " " | 0 17 10½ | 5 | 1 2 10½ |
| 14 | " " | 0 19 3 | 5 | 1 4 3 |
| 15 | " " | 1 0 7½ | 5 | 1 5 7½ |
| 16 | " " | 1 2 0 | 5 | 1 7 0 |
| 17 | " " | 1 3 4½ | 5 | 1 8 4½ |
| 18 | 1 5 " | 1 5 6 | 5 | 1 10 6 |
| 19 | " " | 1 6 11 | 5 | 1 11 11 |
| 20 | " " | 1 8 4 | 5 | 1 13 4 |
| 21 | " " | 1 9 9 | 5 | 1 14 9 |
| 22 | " " | 1 11 2 | 5 | 1 16 2 |
| 23 | " " | 1 12 7 | 5 | 1 17 7 |
| 24 | 1 5½ " | 1 15 0 | 5 | 2 0 0 |
| 25 | " " | 1 16 5½ | 5 | 2 1 5½ |
| 26 | " " | 1 17 11 | 5 | 2 2 11 |
| 27 | " " | 1 19 4½ | 5 | 2 4 4½ |
| 28 | " " | 2 0 10 | 5 | 2 5 10 |
| 29 | " " | 2 2 3½ | 5 | 2 7 3½ |
| 30 | 1 6 " | 2 5 0 | 5 | 2 10 0 |
| 31 | " " | 2 6 6 | 5 | 2 11 6 |
| 32 | " " | 2 8 0 | 5 | 2 13 0 |
| 33 | " " | 2 9 6 | 5 | 2 14 6 |
| 34 | " " | 2 11 0 | 5 | 2 16 0 |

much harder terms from them. Thus they pay a deposit of £10 or more on an appointment as a vanman and have to take the responsibility of all the debts incurred by customers. They also agree to the condition that the firm holds the deposit against all outstanding accounts, and whenever the latter are more than the amount of the deposit the vanman may be summarily dismissed, his deposit being retained. This provision is intended primarily to protect the firm against recklessness in the matter of credit-giving as well as against embezzlement by means of spurious accounts, and although the terms may seem very harsh to the worker as stated above—for it is impossible to sell any considerable quantity of bread from a van without giving some credit—yet the harshness may readily be removed by the spirit in which the terms are administered, and a reasonable firm would hardly dismiss a man or forfeit his deposit in a case in which he had allowed *bona fide* debts to accumulate a little past the bounds. When men are employed under such conditions they are only nominally servants of the firm and are really in the position of agents selling the firm's goods; hence the need for part of their remuneration to be paid as wages to give the firm a legal status as the employer, and to make the vanman responsible

as a servant. With the arrangements mentioned above it is necessary that the firm should protect its own interest in the proprietary right to the Relation of Firm to Customers. customers. Thus, although the men are responsible for customers' debts, they must supply the name and address of every customer to the firm, with a record week by week of the indebtedness of each. This last stipulation may readily be waived if the vanman is willing to pay for all the goods he takes out and square his account regularly, but even then the firm, for its own protection, must insist on being supplied with a full list of the names and addresses of all customers and immediate notice of any removal or change of address. The most satisfactory arrangement is, of course, that by which the vanman, on return from his round, calls over the name of each customer and gives the amount sold to each, whether the sale has been for cash or credit, and in firms of moderate size this plan is generally followed; but the magnitude of the operations of some of the larger concerns makes this arrangement very troublesome, and the keeping of the accounts becomes expensive out of proportion to their value. In big businesses, therefore, it is usual to make the vanman responsible for private customers' accounts as stated above.

When accounts are kept by the firm, some ingenuity may be exercised in simplifying the method so as to make the account-keeping easy, and yet clear and safe. The writer has found that the best Vanmen's Books and Office Duplicates. plan is to supply the vanmen with books ruled in a certain way, and to keep duplicate books in the office, a separate book for each vanman. From the office duplicates the weekly accounts can be easily made out, and the amount of account at the end of the week need only be posted in the accounts ledger. This comparatively simple and crude method of keeping private customers' accounts is possible in connection with the baking and confectionery business only because of the limited variety of articles sold on the rounds and the uniformity of price. Loaves of largest size and best quality can be readily indicated by the simple number, while if second-quality bread is made some distinguishing mark can be used, such as an \vee at the top of the figure; thus two loaves of second quality would be marked as $2\vee$. For loaves of smaller sizes the price of the loaf can be marked at the top of the figure, thus 1 small $2d.$ loaf would be shown as 1^2 . All goods such as flour, biscuits, or pastries would be indicated, both as to kind and quantity, by a figure showing the number of parcels, which are usually made up to standard size, in the case of flour, and by the money values in the case of biscuits, cake, or pastries. Thus, where flour is made up in "quartern" parcels ($3\frac{1}{2}$ lb.) the number of quarterns would be shown in figures and the nature of the goods by a letter, so that 2 quarterns would be written 2^F , and 1s. worth of biscuits, cake, or pastries would be written 1^b , 1^c , or 1^p respectively. It may appear to anyone to whom this system is new that so many signs and figures would lead to complications, but in practice no such difficulty arises, and these signs are quite sufficient to serve as indicators for the purpose of making out customers' accounts. The system serves efficiently as a check on the vanman, since a vertical addition of the

columns shows each day how much of all kinds of goods he has sold and how much cash has been received. As the office book is in duplicate of that carried by the vanman, the latter cannot alter or manipulate his book after his account for the night is settled, as vanmen have on occasions been discovered doing. A specimen page of a book ruled as described is shown, filled in, on p. 420. The scheme of the book will be seen at a glance. As the round probably requires several pages of such a rounds book for each week, the totals from the bottom of one page are carried forward to the top of the next; or better still, a summary of the pages is made on the last one to show the grand totals. The amount of accurate information supplied by such a book at a glance is very considerable, and is absolutely necessary if the master or manager is to keep a firm hold on the details of the business. Thus he can see from week to week how each special product is selling, and generally whether each roundsman's sales are growing or receding; he can also watch carefully whether the total indebtedness of customers is getting less or more, and, running his eye along the individual accounts, he readily notes who is falling behind, and can take steps to prevent a loss. If the roundsman is paid wholly or partly by commission, this book shows readily the amount to be allowed.

As a point of administration the roundsmen should be required to leave their round books, in which the figures are generally in pencil, at the office, and the figures in the last three money columns should be **Checking Van-** inked in. This method is better than calling over the **men's Books.** amounts to the men and allowing them to fill up the amounts in their books. The men's books should also be compared weekly with the duplicates at the office, so that mistakes which might occur, or manipulations which sometimes are undertaken, can be detected and rectified before they get on to the customers' accounts and cause serious trouble. The addition of the vertical columns for each day at the time of marking up the man's returns prevents all possibility of disputes afterwards, so far at least as the man is concerned. That his account may be properly made up each day, the last customer on his list should be "returns", and all the goods remaining unsold are marked to this account, so that the total for the day should correspond with the amount taken out. The advantage of this is that it keeps a record of returns, for if this is not done the returns are sometimes disputed after a few days to justify some error in the customers' accounts. But the quantities taken out should also be properly recorded and signed for by the roundsmen. Whatever care is taken to prepare a man's bread, &c., it should be a standing rule that he verifies the quantities and is afterwards held responsible; no dispute as to quantities being entertained after the goods are taken out.

Columns are given in the rounds book to show the names of streets and the numbers of the houses as well as the names of customers. In the large towns vanmen get into a very slipshod way of keeping **Need of Exact** customers' accounts, using only the numbers of houses and **Addresses.** not the customers' names to indicate how the goods had been disposed of.

SPECIMEN OF VANMAN'S ROUNDS BOOK

| Street No. | Customers' Names. | Account Owing. | June 7. M. | June 8. T. | June 9. W. | June 10. Th. | June 11. F. | June 12. S. | Total Account. | Paid in Week. | Amount Owning. |
|-------------|---------------------|----------------|----------------------------------|-------------------------------|---------------------------------|----------------------------------|--|---------------------------------|----------------|---------------|----------------|
| | | £ s. d. | | | | | | | £ s. d. | £ s. d. | £ s. d. |
| Wilson St.: | 9 Willis | 0 6 3 | 1.4/ | 2 | 2 | 1 | 1 | 3 & 6 ^c | 0 9 3 | 0 4 0 | 0 5 3 |
| | 27 Warren | 0 0 0 | 1 ² .2d. | 1.3d. | 1 | 2 | 1 | 2.1/6 | 0 1 11 | 0 1 11 | — |
| | 34 Jones | 0 3 4 | 1 & 6 ^F .3/4 | 1 | 2 | — | 2 | 2 & 1 ^c | 0 6 10 | 0 3 4 | 0 3 6 |
| | 53 Smith | 0 2 8 | 2.2/8 | 2 & 6 ^F | 1 | 2 | 1 | 2.3/ | 0 5 8 | 0 5 8 | 0 3 0 |
| | 68 Barrett | 0 3 6 | 2 ^v .3/ | 2 ^v | 2 ^v | 2 & 6 ^F | 2 ^v | 4 ^v & 6 ^p | 0 10 11 | 0 3 0 | 0 7 11 |
| | Campbell | 0 12 2 | 1 & 1 ² .10/ | 1.2/2 | 2 | 1 | 1 | 2 | 0 14 4 | 0 12 2 | 0 2 2 |
| | 75 Simpson | 0 1 6 | .1/6 | 2.6d. | 1 & 6 ^p | 2 | 1 & 6 ^c | 2 & 9 ^p | 0 5 3 | 0 2 0 | 0 3 3 |
| | 120 Thompson | 0 0 9 | 2.1/3 | 1.3d. | 2 | 1 & 6 ^p .1/3 | 2 | 3 | 0 4 0 | 0 2 9 | 0 1 3 |
| | Cromae St.: | | | | | | | | | | |
| | 15 Reid | 0 1 8 | 2.1/8 | 1 & 6 ^p | 2 | 1 | 1 & 6 ^F | 1 & 6 ^p | 0 5 2 | 0 1 8 | 0 3 6 |
| | 28 M'Cann | 0 5 4 | 1 & 6 ^p .5/4 | 2 | 1 | 2 | 1 | 2 & 1 ^c | 0 9 1 | 0 5 4 | 0 3 9 |
| | 33 Jack | 0 2 6 | 2.2/ | 2.6d. | 1 & 6 ^F | 1 | 1 ² | 2 | 0 5 2 | 0 2 6 | 0 2 8 |
| | 97 Gunn | 0 0 0 | 3 & 6 ^F | 2 | 1 & 9 ^F | 1 | 2 | 2 & 6 ^c | 0 4 6 | 0 0 0 | 0 4 6 |
| | Ferguson | 0 9 0 | 2.9/ | 3 | 2 | — | 2 & 6 ^F | 2 | 0 12 3 | 0 9 0 | 0 3 3 |
| | Beckon | 0 4 3 | 1.4/3 | 2 | 1 & 3 ^p | 2 | 1 & 3 ^p | 2 | 0 7 0 | 0 4 3 | 0 2 9 |
| | Foster | 0 2 0 | 2 | 1.2/ | 2 | 1 | 2 | 2 & 6 ^p | 0 5 0 | 0 2 0 | 0 3 0 |
| | Jones | 0 1 10 | 1.1/6 | 2 ^v .9½ | 2 | 1 ² | 2 | 2 | 0 4 2½ | 0 2 3½ | 0 1 11 |
| | Total Bread ... | | 21.2 ^v 2 ² | 23.4 ^v | 23.2 ^v | 17.2 ^v 1 ² | 20.2 ^v | 31.4 ^v | — | — | — |
| | Total F and P and c | | 1 ^F 6 ^p | 6 ^F 6 ^p | 1/3 ^F 9 ^p | 6 ^F .6 ^p | 1 ^F 3 ^p 6 ^c | 2/3 ^p 3 ^c | — | — | — |
| | Total Cash ... | 2 16 9 | 49/8 | 6/5½ | — | 1/3 | — | 4/6 | 5 10 6½ | 3 1 10½ | 2 8 8 |



A COUNTRY BAKER'S SHOP

In the event of disputes arising afterwards, customers repudiate their accounts, particularly in those houses where more than one family resides; or, in cases where it may be necessary to take legal proceedings after a customer has moved away from a neighbourhood, there is sometimes much difficulty in finding the correct name. It should always be a rule that a new customer's name and correct address be used on the roundsman's and on the firm's books. The system outlined above makes it easy for the deliverer to tell a customer his indebtedness on any day in the middle of the week, but the firm should in addition send in weekly accounts even to those customers who pay at longer intervals, and a notice should be printed on the accounts advising customers that if their accounts are not delivered regularly on a certain day of the week—Monday or Tuesday, as the case may be—they should communicate directly with the firm. This precaution is necessary where the business is much ramified, to counteract carelessness on the part of the men or prevent frauds, for if any manipulations of the rounds book have been done, detection may readily be prevented by withholding the customers' accounts so that they should not know the exact state of affairs as in the books of the firm. If anything of this kind is suspected, the best plan is either to send the accounts through the post, or deliver them personally or by a special messenger.

To prevent frauds either on customers or on the firm, the expedient is sometimes tried of supplying customers with books in which the men have to mark the goods as delivered. The theory is that the **Passbooks for Customers.** customer will readily bring the book to the door each day

when the "baker" arrives and allow him to mark the quantities at once; if this were done the books would be the proper source from which to make up the customers' accounts, but customers are not more precise than bread deliverers, with the result that for days together the book may be lost or the customer may be too busy or too careless to look for it; then two or three days may be marked up at once from memory and may readily be marked wrong. The system has its good points, and is certainly a protection to the customers, but bakers should be very careful about adopting it for all customers. The writer had some convincing experience on this point. To satisfy all customers that they were being fairly treated, everyone was supplied with a passbook under the conditions mentioned above, and to safeguard the interests of the firm customers were also supplied with weekly accounts—not in detail, but giving total indebtedness only—so that they could compare them with the passbooks. The result of the experiment was very discouraging. The passbooks were not entered up properly, comparisons were not made between them and the accounts till some weeks after differences had actually appeared, and the result was a plentiful crop of disputes over accounts, which, on account of the passbooks, had generally to be settled in favour of the customers. It is not wise to be stubborn in the matter, but unless customers really insist on being supplied with passbooks, it is better to rely wholly on weekly accounts and let the customers keep their own check on the deliverer. In

the case of customers who do demand books, they are usually precise people who see that the books are properly kept, and the same trouble does not arise as when the passbook system is adopted universally.

However tactful and careful bread deliverers are, the proprietor of a business, if it is a small one, should make a point of knowing his Value of Proprietor's customers personally, or at any rate of going round Personal Attention. with his men at regular intervals to verify names and addresses, and to see that the outside business is being conducted properly. The attention of the proprietor, be it ever so slight, pleases the customers, and to some extent prevents the vanman from securing such a personal hold over them that when he seeks a new situation he can take a large proportion of the customers to a new employer. It is possible to induce a man who is extremely anxious to secure a situation to sign an agreement which will prevent him taking service with another employer within a certain radius, but it is much better to depend rather on quality of goods and the personal influence of the proprietor to hold customers than to exact terms from employees that may be very hard on them. When a firm is a large one, the proprietor or manager cannot well spare the time to become personally acquainted with customers; he has then to employ special men of good address who undertake this kind of work. Their duties are to become perfectly familiar with each man's round, so that in the event of sickness the customers may not suffer from delay or inconvenience of any kind; they attend to all disputes over accounts or other matters, and in the case of the inevitable complaints that are made from time to time as to faults in bread, &c., they interview customers and explain matters as nicely as possible. Different kinds of businesses require different proportions of these inspectors, but for retail businesses, where the rounds are large, one man should be employed as inspector for every six Inspectors. roundsmen working. In the absence of other work the inspector will be able to accompany each of these roundsmen at least one day a week, and thus become familiar with the location of the customers on all the rounds. As the inspectors must be paid good wages that they may be always well dressed, the expense of the arrangement is considerable, yet it is necessary, and therefore in the long run economical.

Some firms make it part of the duties of their inspectors to canvass for new customers whenever they can be spared from the work of supervising the men under their charge. This is very doubtful policy, Canvassing. especially if either the inspectors or the firm become attached to the idea that the essential work of the inspector is to be a canvasser and a finder of new customers. When this spirit prevails, there arises a greater or less tendency to slackness in the care of the customers already dealing with the firm, and looseness in keeping the roundsmen well up to their work, and from both these causes the loss of trade or of profit may more than balance any gain arising from new customers obtained by canvassing. It is a debatable point whether canvassing, in fact, is of any great advantage at all. In the case of a new firm able to make a good display from

the beginning, it certainly has value as a method of advertising, though even in that case but little value as an immediate means of obtaining customers; in the case of an old firm its advertising value is less and its value as an improver of trade no more. Customers have some sentiment of kindness towards the firms with which they do business, and will not readily change at the request of canvassers. This is true at least of the best class, who are really the only ones worth seeking. Of those who are always willing to change, some are of the discontented sort, who are as difficult to hold as they are easy to get; some belong to the class who pay their accounts very irregularly or do not pay them at all; while some may be quite genuine people, who may be dissatisfied with the baker from whom they are purchasing their goods and are willing to make a change. It is very doubtful if the possibility of securing a few customers is sufficient justification for a deliberate system of canvassing, for the baker really places himself in a wrong position towards the customers he secures in this way, while he is also likely to intensify considerably the competition of his neighbours from whom the customers have been taken, with an ultimate reduction in price on their part or some other expedient to retain or recover customers that may result in the net profit of the whole business being reduced. It is not an uncommon experience to find the whole business of a neighbourhood rendered permanently unprofitable through the adoption of such expedients as canvassing for customers by one firm, and the canvassing firm inevitably suffers with the others.

What may legitimately be done to keep customers and to secure new ones is to make the quality of the goods sold value for the price charged, to deliver them from vans or otherwise that always appear Neat and Clean
neat and clean, and by roundsmen in keeping with the Delivery.
vans and with the nature of the goods they handle. In London and elsewhere it is still quite a common practice for the deliverer to sling the basket in which he carries bread to customers' doors over his shoulder in such a position that the loaves rest against the back of his jacket, which may or may not be clean; the baskets are sometimes dusty or dirty with the accumulations of weeks, and the appearance of the deliverer far from clean. The bread is exposed on the top of an open cart to all the dust of traffic and the drying influence of the air, or it may be covered over with flour sacks, which are not by any means ideal coverings. It may be a little harder for the horse and more troublesome for the man to have a covered van for the conveyance of the baker's goods to customers, but it is certainly the most suitable kind. If the customers are wholesale, and each takes considerable quantities, the most suitable arrangement for either bread or confectionery is to have light boards, with sides, which run on light angle-iron runners in the van. For wholesale confectioners the boards ought to have the edges higher than any of the goods they contain when these are packed on edge. This precaution enables the boxes to be packed one on top of another when necessary, whereas, if the boards have only low sides, over which the goods project when packed, a great deal of

space is needed for the accommodation of the boards unless special racks are provided. If the van accommodation is needed mostly for bread, and that for private customers, the most convenient arrangement is to have the van lined with boards or shelves without any sides whatever, so that each set of shelves forms a continuous floor. With a small, light peel, similar to that used for setting bread in the oven, but with a short handle, the vanman can draw whatever loaves he requires to the back of the van, or to the front if there is a door there, and place them in the basket for delivery to customers. So little care is sometimes taken with bread in vans that it is thrown in heaps on the bottom only, and fished out with the whip or any kind of stick that may be handy, with the result that many of the loaves are crushed, or have their crust badly broken, and present a poor appearance when offered to the customer.

It should always be remembered that bread is one of the things that cannot be washed or in any way cleaned after it leaves the vanman's hands and before it is set on the table, and on this account **Wax-paper Wrapping.** cannot be handled with too much care or on a system too cleanly. In some parts of America the practice has now become very common of wrapping loaves in wax paper after they have been allowed to cool on the bread-store shelves. This plan has been adopted in only a few cases in this country yet, but it is one that is likely, on its own merit, to grow in favour. It must when adopted considerably increase the cost of the loaf, but the better class of private customer will not be unwilling to meet this extra charge when the greater cleanliness is so apparent. The untidy practices into which deliverers drop have been already alluded to, but however careful they may be, they cannot keep their hands clean; handling the reins and counting money cause the hands, before the day is far gone, to become very grimy, and there is no possibility of carrying water about for hand-washing. This supplies the strongest argument for sending all bread out from the bakery already wrapped in paper. The conditions under which bread is made with regard to time and the bulk of the loaves are formidable obstacles to the adoption of this reform, but are not insuperable, and as soon as a definite demand is made for it on the part of the public the trade will readily rise to the occasion. The demand of the public in this matter, as in many others, is likely to be initiated by one enterprising baker in any district who starts bread-wrapping as an expedient to attract new customers.

Country bakers have long been familiar, especially in Ireland and Scotland, with the competition of the bakers in the cities and large towns, **Competition of Town and Country.** who, by vans, or, for long distances, by rail, have sent their products into the small towns and villages to the discomfiture of the local men. The public is prone to give the preference to the large bakers, and to ascribe to their goods superior qualities to those of the goods made by men with whom they are familiar, and on that account local men have to meet this kind of competition at considerable disadvantage. It is to be feared that the advent of road motors, that can

be run very cheaply as compared with horses for long distances, may in the future intensify this kind of competition. It is possible, however, that the conditions of the competition may be reversed from the order in which it has hitherto been, and the large bakeries may be situated in the country, or the extreme suburbs, carrying the bread by motor vans into the towns. The ideal situation for a bread factory would be in the country, and if flour, fuel, &c., were hauled by road motor, perhaps from mill and coal pit quite near, the cost of raw material need not be greater than, or indeed as great as, the raw materials of the town factory, while the small extra cost of transit of the finished goods from the country factory into towns at considerable distance would be easily compensated for by the cheaper manufacture both in power and in wages possible in the country. Already some large firms in the cities and large towns are employing motor vans for bread delivery. This fact disposes to some extent of the fear that the use of petrol or other spirit with a strong smell in the motor of a bread van would taint the bread carried. Bread readily absorbs taints of this sort, but hardly in an enclosed van when the spirit is in the motor exposed to the open air.

There is, however, serious difficulty in the use of a motor for bread delivery in the extra cost required for attendance, particularly if the bread is delivered in small or in retail quantities; in this case **Motor Vans for Bread Delivery.** the man who drives the motor cannot sell the bread. Even gloves used for driving would hardly meet the case. It would be necessary to keep a driver and a deliverer for each van. The double staff is sometimes necessary even with a horse van, and may be economical enough when the round is large, but not with a small round. One advantage of a motor van over a horse one is in the speed of getting from one district to another; so that a round over a large area can be served nearly as quickly with a motor as a closely packed round with a horse van. The economical use of motor vans may be admitted as established when the deliveries are to a firm's own shops or depots, scattered over a wide area, or in different towns, or in serving wholesale customers situated under the same conditions. Here the wages of two men, spread over the whole goods delivered, do not materially increase the prime cost of the goods, particularly as one motor van is readily capable of delivering double or even three times as much as a horse van over a greatly extended area and in a shorter time. With a large factory at or near a mill in the country it would be possible to supply customers at distances all round of 40 and 50 miles with bread and confectionery as easily as customers who are now supplied by horse vans at distances of 6 or 7 miles. Nothing is more likely than that in the near future small motor vans will be used for the delivery of bakers' goods even to private customers, but it may then be a matter of necessity to wrap all bread in waxed paper to prevent contamination. If this were done the delivery by one man with a boy attendant will be quite practicable. The first cost of a motor van is at present considerably more than that of one horse van and all accessories,

but since its work capacity is two or three times as great as that of the latter, the first cost, considered in relation to work, is really not greater for a motor than for vans. Not so long ago the average man looked on motors of all sorts as fearful and perfectly erratic mechanisms, in no sense to be relied upon, but the day of experiment is now nearly over, and motors, by those who use them, are regarded as much less delicate and more reliable than horses. Those who keep a number of horses know how delicate these animals are, how very limited is their work capacity, and how it is necessary to keep three horses for two horses' work if for six days in the week.

CHAPTER LX

THE SHOP

It is difficult to imagine the time when there were no bakers' shops, and yet all the evidence in history points to the fact that the baker had, like others, to take his wares to the public market and sell them from cart or stall, according to market rules only as to time and price. Thirty years ago the shop-counter trade stood in much greater proportion to the whole trade done than is the case now, because of the change in the habits of the people, and the extreme competition amongst the bakers.

The Shop as Distributing Agency. Even the poorest people expect now to have their bread delivered at their doors, and to get credit for a week or more. On this account the shop, so far as the bread trade is concerned, has become almost superfluous as a distributing agency and an unnecessary cause of expense. Some large factories place themselves in an advantageous position for competing by not keeping shops, except perhaps one near the factory for the sale of surplus and stale bread, while little bakers are encumbered by the rent and rates of a shop with little compensating advantage in the way of sales. There is, however, a certain sentiment attached to the possession of a shop, which implies stability both to the proprietor or firm and to customers, that is an important asset to a business. When the business is a mixed one, producing bread and confectionery, a shop then becomes a necessity; and according to pretensions in the character of the business to be done, so will be the expense of fitting. For a plain bread shop there is a sort of fitness in having the whole appearance of the shop and all the fittings very substantial, very clean, and nearly free from ornament, although that does not in any sense imply ugliness. Fittings of oak with a little bright brass work here and there are most suitable for a bread shop. But in spite of plainness of fittings there is an effective and an ineffective way of displaying even such a common article as bread. Too often the spirit of the shopkeeper seems overcast with the sense that it is "only bread" that is being handled, and that no care need be exercised



in displaying it to advantage: it is thrown in the window sometimes on the bare boards or tiles all in a heap, or at least without any apparent effort at ordinary arrangement. It is surprising how effective a nice Display of Bread. display of bread can be in drawing customers to a shop, and customers who are drawn by this means are usually much more permanent than those obtained by canvassing.

In the windows of a shop in which confectionery is sold it is usual to set out the confectionery goods with all care, but either to keep the bread out of the window altogether or to relegate it to a back A Mixed Display. corner in a side window, and display it in a way that is not enticing. The writer has seen the best results follow from the plan of giving the bread, chosen carefully each morning, a prominent place on a "step stand" in the very centre of a large window, with the confectionery goods displayed on neat trays and stands in front of the bread stand and at the sides. The sense of the arrangement consists in the fact that bread needs to be made prominent and as enticing as possible because of its commonness, while those fond of confectionery will readily look for it. The mainstay of most mixed businesses is really the bread trade, and customers obtained for bread are almost certain to be retained for confectionery. For the effective display of confectionery goods it is doubtful if fittings and cases that are substantial but plain are not much more suitable than those that are elaborate and very costly, although the plain-looking fittings, if very substantial and well finished, may cost more than those that are more ornamental. When a choice has to be made between metal work that is plated and other of well-polished brass the latter should be chosen, as it appears brighter and warmer than the plated.

In window-dressing, when confectionery forms the great part of the exhibition, there may be as much taste shown as in the display of drapery goods. This is specially true now, when coloured fondant and water icing are used to give such a variety of colour to confectionery. It will serve no good purpose to enter here into a long dissertation on primary and secondary colours, and to give rules for the proper arrangement of the Display of Confectionery. goods according to colour; but something can be profitably written about combinations to avoid, whether in finishing the goods or in displaying them in the window or the cases. It should be remembered that the groundwork, whether tiles, paper, velvet, or muslin, forms part of the colour scheme in a confectioner's window.

An expert window-dresser gives the following rules for harmony in arranging colours in the display of goods. Red and yellow do not accord well. Orange and yellow harmonize much better than Colour Harmonies and Discords. red and orange. Orange and green should not be placed together. Orange and violet accord passably. Yellow and green form an agreeable combination. Yellow and blue may be placed together, but the effect is rather dull. Green and blue do not produce an agreeable combination. Green and violet form a more tasteful combination. Red and orange do not accord well. Red and yellow make a suitable contrast

especially if the red is purple-red rather than scarlet, and the yellow rather greenish than orange. Red and blue accord passably, if the red is rather of a scarlet than a crimson tinge. Blue and violet accord badly. When two colours contrast badly it is better to separate them by something light, such as a white or light cream colour. When there are goods of the same colour but of different shades these are always suitable for placing together. When fondant of one colour is used for masking goods it may properly be piped or decorated with sugar or other decoration of the same colour, but of a different shade, and the contrast of the two shades always looks well. The colours mentioned in the above rules are not all those that

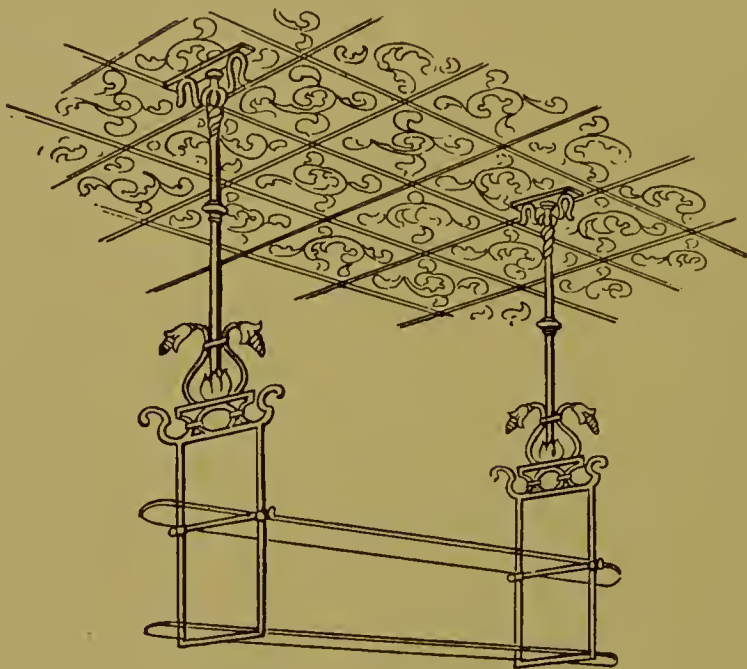
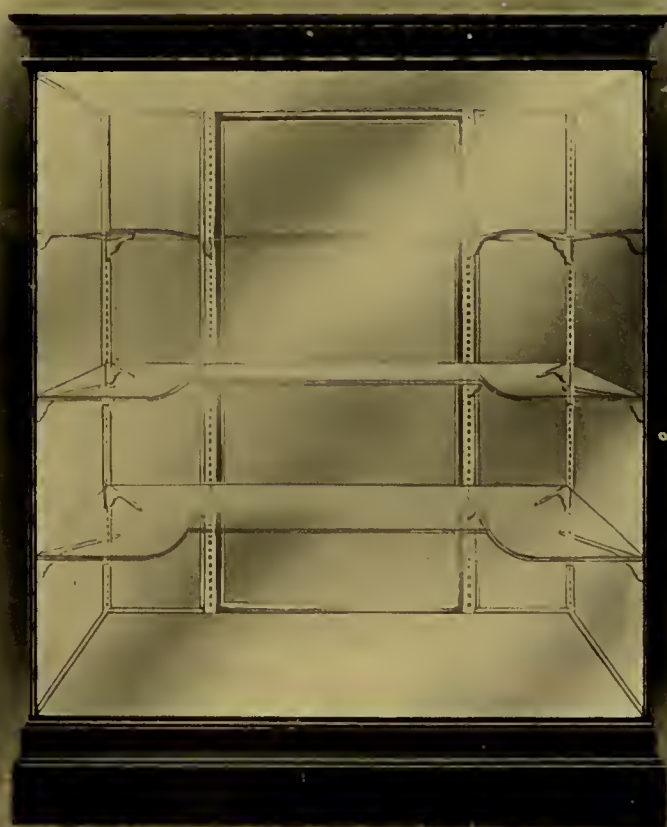
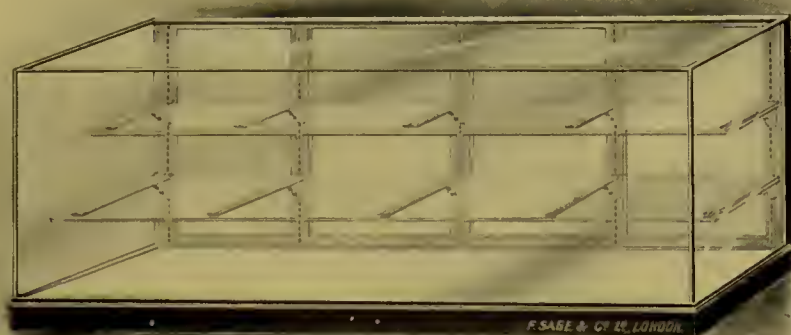


Fig. 254.—Hanging Shelves

correspond to the colours of flour confectionery, but as it is quite the fashion to use velvets and muslins of different colours to produce a bright-looking ground, the rules are applicable and useful.

Next to the colour scheme the effectiveness of a window display depends very much on the order in which the goods are placed. There is a certain disorder that may look artistic, while a too rigid regard for mathematical distribution of dishes may become wearisome to look at. A window-dresser with taste, who makes careful observations as to what arrangements look best in the windows of other shops, need have no difficulty in making a very attractive display of the goods of a baker and confectioner. Personally the writer prefers to see the window set out in what might be called a substantial way, rather than as if too great striving were made after what is regarded as artistic effect or even daintiness, for after all the window is not like a table from which the goods are to be directly eaten, but is for the display of stock, and customers

Arrangement
of Goods
in Window.



as a rule like to be able to make their selection from large quantities, and have a fondness for the actual goods they see in the window rather than for the same goods in the shop. Yet any appearance of heaviness or crowding should be carefully avoided. A sense of lightness is given to the display by the use of hanging shelves (fig. 254), which, however, are best hung well back in the window rather than close against the window, while a light step stand is much more effective for confectionery display than a number of cake stands and trays on the bottom of the window, especially if the latter is very large.

For counter display the space is much augmented by the use of large

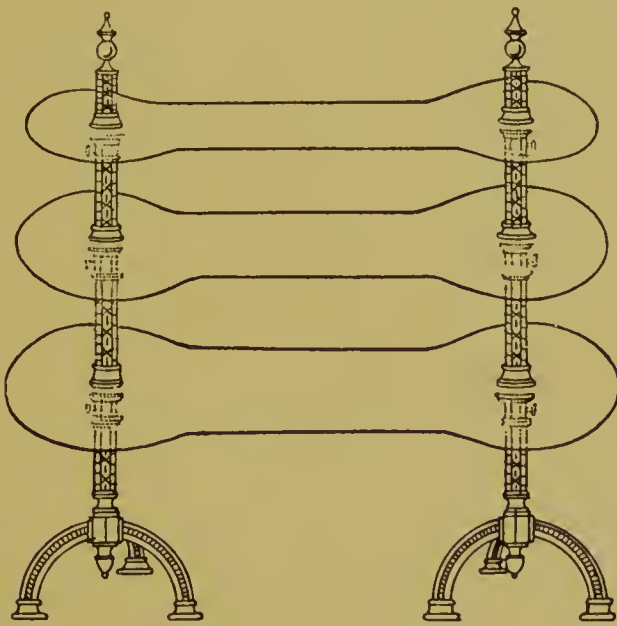


Fig. 255.—Counter Stand

plate-glass stands. The long shape on two pillars (fig. 255) is better for displaying goods than the round shape on one pillar, as the pillar in the latter is in the way. When fancy chocolates or other high-class sweets are sold, there can be nothing more effective for their display than a large counter case (see Plate, SHOW CASES—I). The long trays containing the sweets nicely arranged can be tipped up to any desired angle to give the most effective view. The plate-glass counter top all in one sheet does not obstruct the view or detract from the effects of the colours of the goods, while it prevents all possibility of disarrangement or of deposition of dust, and the means of ingress to the case makes it easy to bring out the trays as desired by the customer for selection of variety. When the variety of fancy goods sold is very great, or in the case of catering businesses where the custom is to make a display in the shop of silver or plated goods for the catering department, nothing is more effective than a large glass show case. Some firms have the front of the counter of plate glass, but as this necessitates bending to see the

goods shown, very much of the effect is lost. A large glass case, on the other hand, is imposing to everyone entering the shop. The less framework shown on the case the more advantageously are the contents shown, and it may be accepted as a rule in obtaining a case for the purpose mentioned, that the more ornamental and substantial the silver ware displayed, the less need there is for anything like ornament in the case itself (see Plate, SHOW CASES—II). A severe plainness, in fact, if combined with substantiality, serves to heighten the effect of the ornamentation of the contents.

When the number of employees in a shop is considerable some firms appoint a cashier whose duty is to receive all cash, those who serve only providing the tickets with the amount of purchase. This is obviously

The Cash Desk. only an economical arrangement when the business is comparatively large. It leaves the actual servers free from the trouble of giving change, and allows them to serve more customers in a given time, and is also some safeguard against cheating. Customers are now so habituated to the system in the large shops and stores that they regard it as quite normal in even small shops. One important consideration is that the cashier's desk should be of a style and material in keeping with the other fittings of the shop; then the pay desk may readily become part of the ornament of the shop and add to its general attractiveness.

When the business is not large enough to employ more than two shopkeepers, or even when many are employed, the use of check tills is gradually superseding the pay desk. It is not too much to say that the use of these **Cash Registers.** check tills has enormously decreased the worries of shopkeeping for the proprietors and even for attendants. The earlier types of machines were what are called detail-adding machines. The sales are properly recorded and the pence and shillings separately added, but with these it is necessary to perform a considerable amount of addition of the several items to ascertain the total cash taken. In the later machines this trouble with its possibilities of error is all avoided. The machines are total-adding machines. These are operated in the usual way by pressing the register keys. When an amount key is pressed down, the amount represented by it is automatically recorded and added to the total-adding counter. This counter shows at all times the total of all cash recorded. The special key counters show the number of times the special keys, such as the "no sale", "change", "received on account", and "paid out" keys, are operated. The latest additions to these machines consist of an "indicator flash", which prevents indicating or showing a record before it is completed, a "customer counter" which shows the number of times the register has been operated, a "lid counter" which shows the number of times the lid over the adding wheel has been opened, a "key lock" which can be set so that the register keys cannot be operated when the cash drawer is open, and a "detachable resetting key" for turning the total-adding counter to zero. This key can be removed when desired.

A small size of cash register suitable for a small retail trade has 21 keys, and records sales of any amounts from $\frac{1}{4}d.$ to 6s. 11 $\frac{3}{4}d.$; any other amounts can, of course, be recorded by pressing the necessary keys a sufficient number of times. A few years ago a machine of this type cost over £40, but can now be obtained new from the makers at a quarter of that price. The plate, PATENT CASH-REGISTERING MACHINES, shows a more elaborate machine with 37 keys which will record any amount from $\frac{1}{4}d.$ to £4, 19s. 11 $\frac{3}{4}d.$ This machine has special keys for recording credit sales, money received on account, and money paid out, and prints the amounts of these records on the sales strip. A machine of this class costs nearly twice as much as the smaller machine, but its value to the progressive baker may be very many times more. By an ingenious arrangement the machine delivers a strip to be handed to the customer with the amount of the purchase, and on the other side of this strip the machine at the same time prints any announcement the proprietor of the establishment desires. The small block used for the printing of this advertisement matter costs very little and may be changed as often as wanted. The uses that can be made of such a method of scattering effective announcements to his customers are incalculable, and are effective because free from the ostentation of a formal announcement by circular. Some specimens are given here.

| | | |
|--|--|---|
| <p>We Make <i>a Speciality</i> for this Week of <i>SWISS ROLL.</i> It is <i>Pure and Delicious,</i> and in <i>Pleasant Variety.</i></p> | <p>Our Bread costs a <i>FARTHING MORE</i> than that of Some Others, but its VALUE is a <i>HALFPENNY MORE</i> than Theirs.</p> | <p>We Use no FAT but <i>BUTTER</i> in our <i>CONFECTIONERY.</i> It does not PAY YOU TO BAKE at HOME.</p> |
|--|--|---|

The variety of announcements of this kind that can be printed on the slips is endless, and if they are only made piquant and pithy, changed at least once a week, and topical enough to create curiosity amongst the customers, and, if possible, the general public, there could probably be no better or cheaper method of advertising, for blocks could be used again and again so long as sufficient interval was allowed between successive times of use. Should local authorities require bakers to declare the minimum weight of bread at the time of sale, the

Advertising
Slips.

back of these sale strips would serve admirably as a means of making the declaration.

For office use or cash desk an autographic till with bill attachment (see Plate) can be obtained for about 5 guineas. This has a record roll ruled in four columns and a duplicating attachment providing a bill for the customer with a duplicate of same. These are drawn out by hand after writing. All these mechanical appliances save bookkeeping and duplicating of entries and at the same time are most effective checks against irregularities with the cash.

There is no method of determining the number of shop attendants required for any given size of trade. The very smallest trade cannot be conducted without at least one shopkeeper, and the minimum of safety usually requires two for relief. When the wife of the proprietor of an establishment has to attend to house and shop and the affairs of the family generally, constant attendance in the shop is impossible. In a case like this some sort of warning signal has to be provided to indicate the appearance of a customer. The very crudest and least

satisfactory plan is to place a bell on the counter which the customer requires to ring. It is conceivable that ringing the bell is the last thing certain customers are likely to do. Another device is to have a clasp bell at the top of the door, but effectiveness in this case depends on the door being shut. An electric bell attachment, by which the door makes contact with a switch which rings the bell, is sometimes arranged, and the alarm cannot easily be avoided. A piece of the flooring just inside the door arranged so that the weight of anyone walking over it makes contact with an electric bell is another good arrangement.

In the case of shops in which bread only is sold the system of bookkeeping need be very simple, so simple in fact as to be hardly worthy the name of bookkeeping at all. In London where bread shops are conducted under managers the proprietor supplies the flour and pays all expenses, and is satisfied if the manager pays cash equivalent to the price of 92 quartern (4-lb.) loaves for each sack of flour emptied. There is more difficulty in keeping a check on shops with a mixed trade.

Then the best plan is to treat the shops of the firm as if they were ordinary wholesale customers. Here again it is as well to keep a separate ledger for each shop. If the number of shops is few, the separate ledger helps to simplify matters, and the record of each shop can be more readily compared one week with another; if the shops are many, the single-ledger system still keeps the record of each quite distinct, and one large enough for a year's service need not be a thick volume. The ledger account, showing all goods received by the shop from any source on the debit side, and all cash paid, goods returned or otherwise disposed of on the credit side. These entries will supply sufficient data to determine whether the shop is profitable or not as an ordinary wholesale customer; but to determine whether it is actually paying, as one of the firm's



CASH REGISTER, WITH 37 KEYS



AUTOGRAPHIC TILL, WITH BILL ATTACHMENT

PATENT CASH-REGISTERING MACHINES

branches, it is as well to strike a weekly balance showing on the debit side the items of rent, wages, light, taxes, stationery, and all sundries as estimated for the week on calculations based on these charges for a year. All goods sent to the shops are charged at full selling prices, and of course all goods returned must be credited at the same rate, while for goods left, and which must be sold at a reduced rate, the *difference* between the price charged and that actually obtained for the goods must appear on the credit side of the account for that shop. There is probably no item in a shop's accounts so difficult to control as this of the loss on stale. It can be done by having all stale goods returned to the **Sale of** factory in the case of a large establishment, but this entails **Stale Bread**. a much greater loss than if instructions are given to realize as much as possible on them at the branch establishment. The only check possible in such circumstances is to determine once for all a maximum reduction below which stale must not be sold in branch shops, and if the sale cannot be effected at the price, then to have them returned to the factory to be remade in the usual way into some form in which cake crumbs are used. The greatest care may not entirely prevent leakage, but this is the best that can be done. There may be even more trouble with stale bread if anything should arise to make the quantity considerable, but much of the loss may be prevented by reducing output on succeeding days.

When a firm has a number of shops they should all be connected if possible with the main establishment by telephone. It should be a standing instruction to each vanman returning from his rounds with any goods left, that he call at the nearest branch shop to the **Connection of** round he serves, and receive instructions as to the disposal **Branch Shops**. of the goods he has left. It may be that some of the shops may need an extra supply, or one shop may require some goods taken from there to another branch where there may be short supplies. By an arrangement like this, which once inaugurated may work very smoothly, it is possible to save a great deal of the marginal loss, which may otherwise accrue when each branch shop is allowed for a day even to be considered a distinct establishment from the other branches and from the main factory. For all goods given to vanmen in the manner indicated above they must give a credit note to the shop, which the latter returns with the cash to the office, to be placed to the credit of the shop and debited to the vanman. For all goods received from the vanman the shop gives a credit note, which the vanman pays in with his cash to be credited to him and debited to the shop. When each shop returns its cash, &c., daily the **Daily Shop** amount of that, together with such details as are necessary **Return**. to supply exact material for the shop account, should be stated on a special form provided for the purpose.

DAILY RETURN FROM LONDON BAKERY COMPANY SHOPS

Date.....

Totals

| | £ | s. | d. |
|----------------------------|---|----|----|
| Goods Received Factory | | | |
| " " " | | | |
| " " " | | | |
| " No. Vanman... | | | |
| Other Goods Received ... | | | |
| Cash Sales | | | |
| Book, Customers' Cash... | | | |
| " " " | | | |
| " " " | | | |
| Credit Sales | | | |
| " " " | | | |
| Expenses | | | |
| Returns to Factory ... | | | |
| " " " | | | |
| " " Vanmen ... | | | |
| " " " | | | |
| Value of Stale | | | |
| Realized for Stale ... | | | |
| No. of Teas, &c., sold ... | | | |

Weekly Shop The stock of goods should also be returned each week on
Return. another form printed with the necessary items as follows:

WEEKLY STOCK SHEET LONDON BAKERY COMPANY SHOPS

Date.....

| | £ | s. | d. |
|-------------------------|---|----|----|
| 4d. per doz. | | | |
| 6d. " " | | | |
| 9d. " " | | | |
| 1s. " " | | | |
| Sundries... .. | | | |
| Cake | | | |
| Bread, Plain | | | |
| " Fancy | | | |
| Biscuits, L.B.C. | | | |
| Biscuits, Guest's ... | | | |
| Aerated Waters... .. | | | |
| Cordials | | | |
| Teas | | | |
| Coffee | | | |
| Cocoa | | | |
| Butter | | | |
| Sugar | | | |

It is not good policy to require the manageress of a shop to fill up too many forms, as the tendency is by this demand to complicate rather than simplify the accounts. The writer had some experience of a system proposed by an accountant, under which the manageress of the shop was required to fill up eight forms every day, each of a complicated nature. The result was that the essential affairs of the shop were neglected to enable this to be done, and the office work was hopelessly congested with details that were of no use in the proper conduct of the business, and the whole arrangement broke down with its undue elaboration. This fault cannot, however, be alleged against that suggested above, and if the details are supplied correctly and regularly the control of the branch shops becomes easy and safe.

CHAPTER LXI

BOOKKEEPING FOR BAKERS, CONFECTIONERS, AND CATERERS

It is essential in these days of progress that every kind of business should be conducted upon correct principles, and that realities alone should be the base of every shopkeeper's and manufacturer's scale of prices. The principal of every trading concern should know exactly where the division between profit and loss exists. This is attainable, not by guesswork or imagining what other persons do and make, but by taking daily records. These, if taken correctly, will furnish a true history of the past business, and will enable a satisfactory judgment to be made as to what are the business prospects of the future. Moreover, the details of these records, becoming fully realized by any master baker and confectioner, enable him to become complete master of his business, and to discover any misplaced expenditure, inadequate return, or overplus in manufacture. A greater knowledge of the financial position of the business naturally gives him greater peace of mind and less anxiety for the future. And if death should unfortunately occur, his business records will enable those who take his place to ascertain the true financial value of his business. The keeping of daily records is in itself of great value. Although at first irksome to some, it keeps the owner in actual touch with the business, and instils habits of punctuality and exactness upon which success so largely depends.

Correct Book-
keeping and
Business Control.

The number of books hereinafter set out, and recommended to be adopted under the varied circumstances, may appear to those whose only book kept is the Bread Ledger as excessive and unnecessary. This, however, is not the case; they are not all daily records, so that those which are not may be kept by professional accountants if such is desired. The Private Ledgers, for instance, of almost every business to which the writer is auditor are kept solely by himself, and this arrangement is generally preferred.

Necessary Books.

The principal difficulty that has been experienced in adopting this system of bookkeeping seems to be that bakers and confectioners do not realize the amount it costs to keep the household. This lack of knowledge generally results in a weekly allowance being made for the household expenses, instead of money being taken from the till as required. This allowance in many cases has been totally inadequate, and great objection has been made to the system of bookkeeping, although this was in no way to blame. It is therefore desirable that when the regular method is adopted, as set out below, the actual sums expended on the household should be taken out of the till as before, but recorded in the Expenses Book. By this means the actual expenses of the house for a month can be ascertained, and, if desired, a proportionate weekly allowance made.

The accounts which are recommended to be kept are based on two great principles. The first of these is the ratio of the cost of the goods bought to the amount realized by their sale. From this is deduced the proportion of such sales which represents cost on the one hand and *gross profit* on the other. Such gross profit should represent a fair and adequate percentage. The second principle consists in ascertaining the expense which has been incurred in placing such goods on the market, and which, when deducted from the aforementioned gross profit, will represent the *net profit* derived by the turnover. From these two principles is gathered the progress of the business. The question now arises, Has the owner benefited by his trading? or, in other words, has the business capital increased or decreased? Whether this is so or not is shown by the excess or diminution of the net profit over the total amount which has been withdrawn from the business for private expenses.

Before commencing a detailed description of the system, mention must be made of the Customers' Ledger, Carmen's Rounds Books, and Customers' Books. The first-named is often called the Bread Ledger or Bakery Ledger. A very useful form, suitable to the businesses of most bakers and confectioners, is shown below. On the extreme left the names of the customers, or, more conveniently, their addresses are inserted. The balances owing are inserted in the adjoining cash column. Each day the number of quarterns delivered—*e.g.* $\frac{1}{2}$, 1, $1\frac{1}{2}$ —is inserted in the first small column under B. Under F and S are inserted the value of the flour and small goods, respectively, which have been bought by the customer. The cash received by the carman is entered in the last small column. It is a good practice to note at the beginning of a round the number of quarterns taken each day, and to agree this with the total of the B column and the number returned to the shop. The total of the cash column should be found every day for each round, and should agree with the cash handed in. Its total should then be entered in the Takings Book, as described later. The cash received in the shop in payment of an account must be posted each day from the Takings Book to the customer's line in this ledger. This may be entered in red ink to distinguish it from the carmen's receipts.

COMPLETE

Week ending.....

| NAMES. | Owing at Beginning of Week. | | | Monday. | | | Tuesday. | | | Wednesday. | | | Thursday. | | | Friday. | | | Saturday. | | | Owing and Week's Goods. | | | Total Cash Received. | | |
|--------|-----------------------------|----|----|---------|----|----|----------|----|----|------------|------|----|-----------|----|------|---------|----|----|-----------|---|----|-------------------------|---|----|----------------------|--|--|
| | £ | s. | d. | B. | F. | S. | Cash | B. | F. | S. | Cash | B. | F. | S. | Cash | B. | F. | S. | Cash | £ | s. | d. | £ | s. | d. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |

BAKERY LEDGER

Week ending.....

| Balance Owing. | | | Monday. | | | Tuesday | | | Wednesday. | | | Thursday. | | | Friday. | | | Saturday. | | | Owing and Week's Goods. | | | Total Cash Received. | | | Balance Owing. | | |
|----------------|----|----|---------|----|----|---------|----|----|------------|------|----|-----------|----|------|---------|----|----|-----------|---|----|-------------------------|---|----|----------------------|---|----|----------------|--|--|
| £ | s. | d. | B. | F. | S. | Cash | B. | F. | S. | Cash | B. | F. | S. | Cash | B. | F. | S. | Cash | £ | s. | d. | £ | s. | d. | £ | s. | d. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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As nearly every baker and confectioner has his customers' bills printed according to his own fancy, little need be said about them. Customers' Bills. Below is reproduced a specimen of a neat and useful ruling for the lower portion of the bill.

| 190... .. | | £ | s. | d. |
|-----------------------|--------|--------|----|----|
| Bill delivered..... | | | | |
| | Bread. | Flour. | | |
| MONDAY..... | | | | |
| TUESDAY..... | | | | |
| WEDNESDAY..... | | | | |
| THURSDAY..... | | | | |
| FRIDAY..... | | | | |
| SATURDAY..... | | | | |
| Fancy Bread.... | | | | |
| Rolls..... | | | | |
| Biscuits..... | | | | |
| Cakes..... | | | | |
| Pastry..... | | | | |
| Small Bread..... | | | | |
| Buns..... | | | | |
| Jams and Jellies..... | | | | |
| | | £ | | |

The books required by an average baker and confectioner, in addition to those described above, naturally divide themselves into two classes. In the one are placed those whose entries constitute the basis upon which the system rests. These may be called the Primary Books. In the other class must be included those whose items are postings or entries from the Primary Books. These may be styled the Secondary Books. The necessary Primary Books are: 1. Expenses Book; 2. Takings Book; 3. Cash Book; 4. Journal or Day Book; 5. Stock Book; whilst the Secondary Books which have been found most useful are: 1. Analysis Book; 2. Ledger; 3. Private Ledger. In giving a detailed account of each of these books, the most natural order will be to follow each Primary Book with the Secondary Book to which it forms a basis. Following this rule, the order of the books will be as follows:—

| | | | |
|-----------|-----|-----|---|
| Primary | ... | ... | 1. Expenses Book. |
| Secondary | ... | ... | 2. Analysis Book or Analytical Journal. |
| Primary | ... | ... | 3. Takings Book. |
| „ | ... | ... | 4. Cash Book. |
| „ | ... | ... | 5. Journal. |
| Secondary | ... | ... | 6. Ledger. |
| „ | ... | ... | 7. Private Ledger. |
| Primary | ... | ... | 8. Stock Book. |

It is necessary to state that the Cash Book, although acting as a Primary Book, in that it records the cash banked and Double Function of Some Books. cheques paid, yet holds the capacity of Secondary Book towards the Takings Book. Moreover, since the Stock Book is only used

when the books are balanced, its discussion will more appropriately follow that of the most important book, viz. the Private Ledger.

It may be here noted that, for the sake of reference, when a payment is entered or posted to another book, or even to another account, the number of the page or folio to which it is posted must always be inserted opposite the amount, and above it should be placed a small abbreviation denoting the book in which the entry is to be found. The abbreviations most common are: Analysis Book, A.B., or Analytical Journal, A.J.; Cash Book, C.B.; Journal, J.; Ledger, L.; Private Ledger, P.L.; Stock Book, S.B.

Before proceeding further, a few words must be devoted to *Till Money*, *Carmen's Change*, and *Petty Cash*. The first of these consists of a definite amount of money kept in the till or tills for change. When the takings are removed from the till each night, this sum is replaced to serve as change for the following morning. A smaller sum of money is usually given to each of the carmen for change. Every evening when the rounds have been finished, the carmen should pay in all the money in their possession on behalf of the business; and after the totals have been checked as described in connection with the Bread Ledger, that part of their cash which represents cash for change should be placed in a separate drawer in the till in readiness for the following morning. Thus, suppose there are six carmen kept, each being allowed half a crown for change; fifteen shillings in small change would be separated from the money paid in and placed in the till to be withdrawn next morning. *Petty Cash* consists of a definite sum of money set aside for the payment of small items which it is found necessary to purchase during the day. These disbursements are entered in the Expenses Book, as described later, and at the end of the day the total is ascertained. The balance should represent the petty cash in hand. Thus, if £5 is kept, and during one day £1, 9s. 2d. is taken for expenses, the balance £3, 10s. 10d. should be the total of the cash. Where a cash-registering till is kept, some bakers, in place of keeping separate petty cash, withdraw their expenses from the till, at the same time marking "cash withdrawn". The till automatically casts these up, and at the end of the day the total should agree with that of the Expenses Book. The petty cash can also be forgone if the till is of the paper roll type; the roll having two columns, the expenses are entered in one column, and the takings in the other. The total of both columns is found at the end of the day. That of the expenses should agree with the total of the items in the Expenses Book; that of the takings will be considered later. Confusion sometimes arises owing to the prevalence of the use of the farthing. Where the total of any of the takings or expenses amounts to an odd farthing, halfpenny, or three-farthings, it is advisable to leave this fraction in the till.

The eight books already referred to will now be described in detail in the order decided on above.

EXPENSES BOOK

This book is about 15 in. long by 5 in. wide. It is ruled with one cash column on the right-hand side of each page, and with a margin on the left-hand side. In it are entered the expenses, such as cream, milk, yeast, &c., as they occur during the day. Sums taken for private or household use must be entered along with the other expenses, and the total of the whole taken at the end of the day. Beside each payment is placed an abbreviation, showing under which head it is analysed in the Analysis Book. These headings and abbreviations are explained in the description of the latter book. The Expenses Book is generally kept in the shop and entered up by the assistants.

The following is an example of a page:—

DAILY EXPENSES

| JANUARY 1ST, 1909. | | £ | s. | d. |
|--------------------|---------------------------------|---|----|----|
| G.P. | Cream..... | 0 | 2 | 1 |
| X. | Directory..... | 0 | 2 | 0 |
| B. | Bags..... | 0 | 5 | 0 |
| X. | Gratuity | 0 | 0 | 3 |
| T. | Cake rings..... | 0 | 10 | 6 |
| W. | Commission..... | 0 | 4 | 0 |
| G.P. | Ice..... | 0 | 1 | 6 |
| " | Salt..... | 0 | 0 | 10 |
| A. | Advertising..... | 0 | 3 | 0 |
| | | 1 | 9 | 2 |
| JANUARY 2ND, 1909. | | £ | s. | d. |
| D. | Repairs to horse cloth..... | 0 | 2 | 0 |
| A/c Pd. | Leesin Bros. a/c..... | 0 | 8 | 7 |
| G.P. | Ice..... | 0 | 1 | 2 |
| " | Yeast..... | 0 | 1 | 11 |
| X. | Gratuity to flour carter..... | 0 | 0 | 4 |
| " | Gratuity to window cleaner..... | 0 | 0 | 3 |
| G.P. | Cream..... | 0 | 1 | 2 |
| W. | Commission..... | 0 | 2 | 6 |
| X. | Sweep..... | 0 | 1 | 0 |
| G.P. | Fruit..... | 0 | 0 | 6 |
| X. | Carriage..... | 0 | 0 | 8 |
| | | 1 | 0 | 1 |

ANALYSIS BOOK OR ANALYTICAL JOURNAL

This book is of foolscap size, ruled with about a dozen cash columns across the double page. As may be gathered from its name, it contains an analysis of the expenses for each day as they have been placed in the Expenses Book. The words "Daily Expenses" are inserted at the head on the line provided, together with the month and year during which the expenses were incurred. Three or more lines

are ruled off, and at the top of each cash column is placed one of the headings under which it is desired to analyse the expenses. The most useful headings are:—

| Heading. | | | | Abbreviation for Use as explained above. |
|-------------------------------------|-----|-----|-----|--|
| 1. Private drawings | ... | ... | ... | P. |
| 2. Household and keep of assistants | ... | ... | ... | House. |
| 3. General purchases | ... | ... | ... | G.P. |
| 4. Wages | ... | ... | ... | W. |
| 5. Coals | ... | ... | ... | C. |
| 6. Bakehouse tools | ... | ... | ... | T. |
| 7. Bags, books, and stationery | ... | ... | ... | B. |
| 8. Accounts paid | ... | ... | ... | A/c Pd. |
| 9. Horse and delivery expenses | ... | ... | ... | D. |
| 10. Trade expenses | ... | ... | ... | X. |
| 11. Advertising | ... | ... | ... | A. |
| 12. Yeast | ... | ... | ... | Y. |
| or Waiters' wages | ... | ... | ... | W.W. |
| or Hire expenses | ... | ... | ... | H. &c. |

In the space at the left-hand side of the left-hand page must now be placed the name of the month and the dates of it under each other. It will be found well to leave a line or so between the weeks. Moreover, it is strongly advised to insert these headings and dates, together with the rulings for the totals, previous to the commencement of the month. Each day after the Expenses Book has been totalled, the items must be roughly analysed, thus:—

| General Purchases. | | Trade Expenses. | | Bags, Books, and Stationery. | | Rough Analysis of Expenses. |
|--------------------|----------|-----------------|----------|------------------------------|----|-----------------------------------|
| s. | d. | s. | d. | s. | d. | |
| 2 | 1 | 2 | 0 | 5 | 0 | |
| 1 | 6 | 0 | 3 | <u> </u> | | |
| 0 | 10 | <u> </u> | | | | |
| <u>4</u> | <u>5</u> | <u>2</u> | <u>3</u> | | | |
| Bakehouse Tools. | | Wages. | | Advertising. | | |
| s. | d. | s. | d. | s. | d. | |
| 10 | 6 | 4 | 0 | 3 | 0 | |
| <u> </u> | | <u> </u> | | <u> </u> | | |

The totals, viz. 4s. 5d., 2s. 3d., &c., should be placed in the Analysis Book opposite the date on which they occur, and under their respective headings. Their total should be entered in the "total" column. This Posting procedure is continued throughout the month, at the end of Analysis Book. which the amount expended under each heading must be totalled, and the total of these must be identical with the sum of the totals for each day. Thus in the specimen given below:—

| | | | | | £ | s. | d. |
|---------------------|----------------------------------|-----|-----|-----|----|----|----|
| Checking Totals. | Private drawings ... | ... | ... | ... | 9 | 0 | 0 |
| | Household and keep of assistants | ... | ... | ... | 10 | 9 | 6 |
| | General purchases | ... | ... | ... | 6 | 9 | 1 |
| | Wages | ... | ... | ... | 43 | 3 | 0 |
| | Coals | ... | ... | ... | 1 | 15 | 0 |
| | Bakehouse tools | ... | ... | ... | 1 | 15 | 0 |
| | Bags, books, and stationery | ... | ... | ... | 1 | 6 | 1 |
| | Credit accounts paid | ... | ... | ... | 1 | 10 | 1 |
| | Horse and delivery expenses | ... | ... | ... | 1 | 6 | 3 |
| | Trade expenses | ... | ... | ... | 3 | 7 | 10 |
| | Advertising | ... | ... | ... | 1 | 3 | 0 |
| | Sum of daily totals | ... | ... | ... | 81 | 4 | 10 |

These amounts should be now posted to their respective accounts in the Private Ledger, as explained later, the pages or folios of these being placed under their monthly totals in the Analysis Book. Where an account is paid for goods supplied on credit, and *in connection with which an account has been opened in the Ledger*, the name of the firm must be inserted in the column provided for that purpose, and the cash so paid should be posted to the account in the Ledger in the same way as the cash from the Cash Book (see later). Where discount is allowed on such a payment, it must be entered in the Cash Book along with the other discounts. It is, however, advisable that as few ledger accounts as possible be paid through the petty cash.

A specimen month of the Analysis Book will be found on pages 464-465.

TAKINGS BOOK

This book is of the same size and contains the same rulings as the Expenses Book. It is generally kept in the shop and entered up by the shop assistants. The balance of cash in hand brought forward from the previous day, after deducting a definite amount for till money and petty cash, is counted, and the amount entered thus:—

| 1908. | | £ | s. | d. |
|---------|-------------------|---|----|----|
| Dec. 31 | Cash in hand..... | 5 | 9 | 6 |

The takings in a baker's and confectioner's business may be conveniently divided into three divisions, viz.: customers' accounts paid; carmen, amount brought in; and shop takings. As regards their entry in the Takings Book, the date is placed at the top of the page; and then as each customer pays his account in the shop, the amount so paid is entered, and at the end of the day such sums are totalled. As each carman comes in, the amount that each has collected (the cash for change having been separated, as described above) is also entered, and the number of the round specified.

Directly the shop is closed it will be necessary to determine the shop

takings for the day. The money in the till should be taken out, with the exception of the till money for change, and counted. The total should agree with the total registered by the till or of the items on the till roll. If the carmen's money, *i.e.* their receipts, not their change, has been paid into the till, the total of these, together with that of the customers' accounts paid, will have to be deducted before the shop takings are obtained. Thus, suppose £10, 3s. 6d. is found in the till, the customers' accounts paid being £3, 2s. 7d., and the amount brought in by the carmen £2, 11s. 3d., the shop takings will be £10, 3s. 6d. less £5, 13s. 10d., *i.e.* £4, 9s. 8d. From the petty cash £1, 9s. 2d. has been paid. This must be made up from the £10, 3s. 6d., leaving £8, 14s. 4d. to be put in the safe with the £5, 9s. 6d. from the previous day ready for banking.

The following are two typical pages:—

| TAKINGS BOOK | | | | TAKINGS BOOK | | | |
|---|----|----|----|---|----|----|----|
| DECEMBER 31ST, 1908. | £ | s. | d. | JANUARY 2ND, 1909. | | | |
| Cash in hand..... | 5 | 9 | 6 | Customers' Accounts paid— | £ | s. | d. |
| JANUARY 1ST, 1909. | | | | Mrs. Blythe.... | 0 | 2 | 7½ |
| Customers' Accounts paid— | £ | s. | d. | “Newstead”..... | 0 | 15 | 4 |
| Jos. Jackson..... | 0 | 3 | 6 | 26 Redtin Rd..... | 0 | 4 | 8½ |
| R. Smithson..... | 0 | 10 | 7 | Mrs. Ewert..... | 0 | 7 | 6 |
| John Rice..... | 1 | 0 | 4 | Miss Jones..... | 0 | 3 | 11 |
| Jacob Jones..... | 0 | 5 | 1 | E. Newcome..... | 0 | 2 | 9 |
| R. Roberts..... | 0 | 12 | 0 | The Bull..... | 0 | 14 | 11 |
| Mrs. Richard..... | 0 | 4 | 3 | | 2 | 11 | 9 |
| Mrs. Steep..... | 0 | 5 | 9 | Carmen— | | | |
| C. Banes..... | 0 | 1 | 1 | 1st Round £0 19 3 | | | |
| | 3 | 2 | 7 | 2nd “ 1 3 9 | | | |
| Carmen— | | | | 3rd “ 0 17 2 | 3 | 0 | 2 |
| 1st Round £0 17 11 | | | | Shop Takings | 5 | 7 | 11 |
| 2nd “ 1 0 9 | | | | | 10 | 19 | 10 |
| 3rd “ 0 12 7 | 2 | 11 | 3 | Less Expenses as per Expenses Book..... | 1 | 0 | 1 |
| Shop Takings..... | 4 | 9 | 8 | | 9 | 19 | 9 |
| | 10 | 3 | 6 | Add Cash in hand brought forward..... | 14 | 3 | 10 |
| Less Expenses as per Expenses Book..... | 1 | 9 | 2 | | 24 | 3 | 7 |
| | 8 | 14 | 4 | Less paid into Bank.... | 14 | 5 | 8 |
| Add Cash in hand brought forward..... | 5 | 9 | 6 | Carried forward... | 9 | 17 | 11 |
| | 14 | 3 | 10 | | | | |
| Less paid into Bank (nil)..... | 0 | 0 | 0 | | | | |
| Carried forward... | 14 | 3 | 10 | | | | |

CASH BOOK

The Cash Book is, like the Analysis Book, of foolscap size. On the debit or left-hand side are six cash columns, to the left of which is a

column for the month and date. On the credit or right-hand page there are three cash columns to the extreme right, next to which is a folio column. A small margin and column bears the month and date, while the next column shows to whom the cheques are paid, and the following one what the cheques are for.

The columns are headed respectively, reading from left to right:—

| | | | | |
|------------------------------------|----------------------------|--|--|--|
| | <i>Debit Page</i> | | | |
| Entries as Debits in Cash Book. | Customers' accounts paid. | | | |
| | Carmen: amount brought in. | | | |
| | Shop takings. | | | |
| | Total. | | | |
| | Expenses. | | | |
| | Banked. | | | |

| | | | | |
|-------------------------------------|-----------------------------|--|--|--|
| | <i>Credit Page</i> | | | |
| Entries as Credits in Cash Book. | Cheques drawn in favour of. | | | |
| | What for? | | | |
| | Folio. | | | |
| | Discount. | | | |
| | Amount of cheque. | | | |
| | Monthly totals. | | | |

The month and dates are entered on the debit page before the commencement of the month in the column provided for that purpose.

From the above headings the book is seen to contain on the debit side summarized records of (1) the Takings Book, (2) the Expenses Book, and (3) the amounts paid into the bank; while on the credit side are (1) the amounts of the cheques drawn out of the bank, (2) discount, &c. A summary is made at the end of every three months for balancing the cash and recording such transactions as are neither takings nor expenses.

Takings must be strictly limited to money received for goods that have been sold in trading as a baker and confectioner. The sale of a horse would not be included with the takings, but, would be entered separately in the Takings Book, thus:—

| | | | | | £ | s. | d. |
|---------------------------|-----|-----|-----|-----|----|----|----|
| Customers' accounts paid | ... | ... | ... | ... | 4 | 5 | 10 |
| Carmen: amount brought in | ... | ... | ... | ... | 5 | 8 | 1 |
| Shop takings | ... | ... | ... | ... | 6 | 17 | 4 |
| | | | | | 16 | 11 | 3 |
| Less expenses | ... | ... | ... | ... | 13 | 6 | 6 |
| | | | | | 3 | 4 | 9 |
| Amount brought forward | ... | ... | ... | ... | 20 | 11 | 7 |
| | | | | | 23 | 16 | 4 |
| Sale of horse | ... | ... | ... | ... | 15 | 15 | 0 |
| | | | | | 39 | 11 | 4 |
| Less banked | ... | ... | ... | ... | 20 | 3 | 0 |
| Forward to next day | ... | ... | ... | ... | 19 | 8 | 4 |

Moreover, when the amounts of the customers' accounts paid, &c., are entered in the Cash Book, the amount of any such sale must be entered in the summary. The significance of this will be understood later.

The subdivision of the takings, which has been arrived at in the Takings Book, is now utilized to show the class of business carried on: that is, whether the bulk of the customers run weekly or monthly accounts, whether the rounds are the valuable part of the concern, or whether the shop itself is the cream of the business. The totals of the money received under the three divisions—viz., customers' accounts paid: carmen, amount brought in; and shop takings—should be entered under their respective headings and opposite the date on which they are received. The total of these three amounts is inserted in the "total" column, and that of the expenses in its column. When money is paid to the bank, the amount must be noted in the "banked" column.

As each cheque is drawn it must be entered on the credit side, together with the discount, if any, allowed. It will be found very useful on entering each cheque to note in the "what for?" column for what goods or expenses such cheque has been drawn. At the end of the month the total of all the cheques drawn should be inserted in the "monthly totals" column, and the totals of both this and the "cheques" column must be carried forward to the next page. The discounts should be totalled, and the sum entered in the discount account in the Private Ledger, to be described later.

On the debit side the monthly totals of the analysed takings should agree exactly with the sum of the "total" column, thus:—

| | | £ | s. | d. | |
|-------------------------------|-----|-----|----|----|-----------------------------------|
| Customers' accounts paid ... | ... | 81 | 6 | 3 | Detail and Gross Totals Check. |
| Carmen: amount brought in ... | ... | 89 | 10 | 7 | |
| Shop takings ... | ... | 133 | 3 | 7 | |
| Sum of "total" column | ... | 304 | 0 | 5 | |

The expenses should be totalled, and the amount should agree with the sum of the "total" column of the Analysis Book.

When the books are started, and at the beginning of every three months, the balance of cash at the bank should be placed at the head of the "banked" column on the first page of the next quarter. If the balance is overdrawn, it should be placed in the "cheques" column on the credit side of the book. The total of the former balance, together with the amounts banked, should be found and carried forward to the next month; while if the balance is overdrawn, it should be included in the total of the cheques carried forward to the next month.

A specimen month of the Cash Book is shown on pages 462-463.

The takings, expenses, bankings, and cheques for the next two months must be entered up in precisely the same manner as described above. But at the close of the three or six months a quarterly or half-yearly cash

summary account must be made on the fourth or seventh page of the Cash Book. Similar summaries must also be made at the end of every succeeding quarter or half year, and will be entered on every fourth or seventh page. It is inadvisable to make these summaries less frequent than half a year.

The summary is best headed:

Dr. Summary of cash for the three months ending.....*Cr.*

On the debit page is first placed the balance of cash in hand at the commencement of the quarter; or if it is the first quarter, the cash in hand on the day on which the books were started. The latter, it will be remembered, was entered in the commencement of the Takings Book, while the former will be identical with the final balance in the previous summary. Under this balance is placed the amount of the till money, thus:—

| 1908. | | £ | s. | d. | £ | s. | d. |
|---------|-------------------------|---|----|----|---|----|----|
| Dec. 31 | To Cash in hand..... | 5 | 9 | 6 | | | |
| " " | " Cash—Till Money | 2 | 0 | 0 | 7 | 9 | 6 |

The total of these is run out into the next cash column, as above.

Entries must now be made of all the cash which has come into the business. In many cases these will be solely the totals of the takings from the three previous pages of the Cash Book. If this is so, the amounts must be debited, and then the total run out to the next cash column, thus:—

| 1909. | | C.B. | £ | s. | d. | £ | s. | d. |
|-------|------------------|------|-----|----|----|-----|----|----|
| Jan. | To Takings | 1 | 304 | 0 | 5 | | | |
| Feb. | " " | 2 | 296 | 14 | 3 | | | |
| Mar. | " " | 3 | 318 | 1 | 6 | 918 | 16 | 2 |

If money was received for the sale of a horse or van, or from a similar source, the amount must be placed under the takings, thus:—

| 1909. | | P.L. | £ | s. | d. |
|--------|-----------------------|------|----|----|----|
| Mar. 5 | To Sale of Horse..... | 93 | 15 | 15 | 0 |

Such an entry as the above must be posted to the credit side of the horse stock account in the Private Ledger.

This will conclude the items on the debit side. On the credit side there must be placed all the cash which has been paid away. Now, part of this will have gone in payment of expenses, and part of it banked. The monthly amounts which have changed hands under these two heads must be entered, thus:—

| 1909. | | A.B. | £ | s. | d. | £ | s. | d. |
|-------|-------------------|------|----|----|----|-----|----|----|
| Jan. | By Expenses | 1 | 81 | 4 | 10 | | | |
| Feb. | " " | 2 | 76 | 3 | 8 | | | |
| Mar. | " " | 3 | 78 | 1 | 2 | 235 | 9 | 8 |

| 1909. | | C.B. | £ | s. | d. | £ | s. | d. |
|-------|------------------------|------|-----|----|----|-----|----|----|
| Jan. | By Amount paid to Bank | 1 | 216 | 15 | 3 | | | |
| Feb. | " " " " | 2 | 221 | 9 | 0 | | | |
| Mar. | " " " " | 3 | 234 | 17 | 6 | 673 | 1 | 9 |

It should be noted that the amount banked any month is best obtained by subtracting from the amount of the "banked" column at the end of the month the total of the same brought forward at the beginning of the month, thus:—

| | | | £ | s. | d. |
|--------------------------|-----|-----|-----|----|----|
| Total at the end of July | ... | ... | 288 | 18 | 9 |
| Commencing balance | ... | ... | 72 | 3 | 6 |
| Amount banked | ... | ... | 216 | 15 | 3 |

These being entered, any other expenses which have been paid, *but have not been placed in the Analysis Book*, such as the payment of repairs, &c., must be credited.

The difference between the total of the debit page and the total of the expenses, amounts banked, and any other expenses, should be identical with the sum of the cash in hand on the last day, as shown by the Takings Book and the till money. If this is so, this balance and till money should be filled in and the two sides totalled as in the specimen below. If, however, this is not the case, either an error must have been made in the bookkeeping, or else some receipt or payment has been made and not recorded.

The table on p. 450 is a sample quarterly cash summary account, supposing that nothing has been received or paid outside the ordinary business routine.

Although departing from the allotted course, in order to save a large amount of repetition, a few words will be here devoted to receipts and payments in connection with the private estate. This may consist of house property, debentures in limited companies, mortgages, &c. The receipts, rent, interest, &c., must all be entered first in the Takings Book on the day on which they are received, and entered from there direct to the Cash Book summary, just as in the case of money received for a horse, &c., sold. Every payment made in ready cash from the till or till money, in connection with the private estate, must be entered in the Expenses Book on

Receipts and Payments
in Connection with
the Private Estate.

the day on which it was paid, but separated from the ordinary business expenses, thus:—

| | | | | | | |
|---|-----------------------------|-----|-----|---|----|----|
| April 12th, 1909 | | | | £ | s. | d. |
| a. | Private drawing | ... | ... | 1 | 0 | 0 |
| b. | General purchases | ... | ... | 0 | 4 | 3 |
| c. | Horse and delivery expenses | ... | ... | 0 | 2 | 0 |
| d. | Trade expenses | ... | ... | 0 | 3 | 4 |
| | | | | 1 | 9 | 7 |
| Paid for repairs to 7 Parker Street ... | | | | 3 | 5 | 0 |
| | | | | 4 | 14 | 7 |

Great care should be taken to put the amounts *a*, *b*, *c*, and *d* in the Analysis Book, together with their total, £1, 9s. 7*d*. The repairs, on the other hand, should, as explained above, be at once credited to the cash summary account. At the end of the quarter the summary is closed in the same manner as explained earlier.

In addition to the quarterly balance of the petty cash, the cash at the bank must also be balanced quarterly with the bankers' pass book. This is effected by totalling the amounts paid into the bank with the amount brought forward from the previous month, and totalling the amounts of the cheques paid during the third month with the previous month's total. The excess of the former over the latter will give the balance of the cash at bank, or the reverse will give the balance overdrawn. This should agree exactly with that shown in the bankers' pass book, provided that all the cheques have been "cleared". If the cheques or payments to the bank are entered *after* the end of the quarter in the pass book, they have not been cleared, and must be added to the credit and debit totals of the pass book respectively, and the same balance obtained, thus:—

| | | | | | | | |
|------------------------|-----|----|----|----------------------|-----|----|----|
| To Amount Banked | £ | s. | d. | By Amount of Cheques | £ | s. | d. |
| | 745 | 5 | 3 | " Balance | 686 | 17 | 7 |
| | | | | | 58 | 7 | 8 |
| | 745 | 5 | 3 | | 745 | 5 | 3 |

AS PER PASS BOOK

| | | | | | | | |
|------------------|------|----|----|------------------|------|----|----|
| Dr. Total | £ | s. | d. | Cr. Total | £ | s. | d. |
| Not Cleared..... | 1313 | 17 | 8 | Not Cleared..... | 1273 | 12 | 6 |
| | 32 | 6 | 0 | Balance..... | 12 | 1 | 10 |
| | | | | | 2 | 1 | 8 |
| | | | | | 58 | 7 | 8 |
| | 1346 | 3 | 8 | | 1346 | 3 | 8 |

The balance so obtained must be carried forward to the commencement of the first month of the next quarter. If the balance of the Cash Book cannot be got to tally with the bankers' pass book, it is probable that a cheque has been erroneously entered.

Checking Cash Book
by Bank Book.

JOURNAL OR DAY BOOK

The Journal or Day Book is essentially a complete record of the goods purchased on credit. It generally consists of a book of foolscap size, having **Function of Journal.** two cash columns and a folio column separated from a date column by the requisite space for copying the invoices. As each invoice arrives and the goods are checked, it is given the next number to the last already entered, and is copied in either in detail or briefly. In the case of millers' carmen's notes, where the amount is not known, the entry is best made as follows:—

July 10. John Stokes, 50 sacks whites,

and the amount filled in either when the invoice comes to hand a few **Pricing Flour** days later, or when the miller's book is entered up by the **Consignments.** traveller. If, however, the flour (or other goods) is being supplied at an agreed price, or under contract, the amount will be known, and can be at once filled in. After each invoice has been entered and numbered, it is placed upon a file, preferably one which **Filing Invoices.** opens as a book. It is left there until the end of the business year, when it will be found convenient to empty the files and store them in packets. When credit notes are received for goods returned or allowances made, the name of the firm with the amount and **Credit Note Entries.** particulars should be entered in *red ink*. The money should not, however, be run out into the second cash column, but left in the first, so that when the columns are totalled the credits are not confused with the debits. Where paper bags, customers' books, coals, and forage are bought on credit, or expenses incurred for hire, they should be entered up in precisely the same manner as the flour and general purchases. It is also a good plan to enter in the Journal the accounts as they are rendered for **Rent, Rates, Gas, &c.** rent, rates and taxes, gas, electric light, and water. These should be entered up in the same manner as the invoices. Many business men, however, prefer to keep these expenses out of the Journal, and to enter them straight into their respective accounts in the Private Ledger. If desired, this may be done.

Specimen entries will be found on pages 466–467.

Quarterly or half-yearly the Journal should be totalled, the total of each page being carried forward to the top of the next, and so on. When this has been done, the invoices will have to be carefully analysed; but, as any error in the invoices will at once throw the analysis out, it will **Analysis of Invoices.** always be found advisable to do the analysis *after* the auditor has checked the invoices and additions, or to leave it for his consideration. The headings for this analysis which have been found most useful are:—1. Flour; 2. General purchases, including such items as butter, eggs, &c.—all things, in fact, that are part of the goods sold in the business of a baker and confectioner; 3. Bags, books, and stationery; 4. Coals; 5. Forage; 6. Hire expenses; and (if required)

7. Rent; 8. Rates and taxes; 9. Gas; 10. Electric light; and 11. Water, &c. If no horses are used (5) will be unnecessary. The total of the purchases and expenses under each of these headings is obtained, and the sum of these should be identical with the sum of the amounts of the invoices, thus:—

SUMMARY OF PURCHASES

FOR THE THREE MONTHS ENDING 31ST MARCH, 1909

| | P.L. | £ | s. | d. |
|-----------------------------------|------|-----|----|----|
| Flour | 34 | 398 | 17 | 3 |
| General Purchases | 56 | 201 | 8 | 5 |
| Bags, Books, and Stationery | 105 | 4 | 12 | 0 |
| Coals | 99 | 1 | 15 | 0 |
| Forage | 111 | 5 | 14 | 3 |
| Hire Expenses | 125 | 3 | 12 | 6 |
| Rent of Shop | 65 | 24 | 0 | 0 |
| Rent of Stables | 65 | 3 | 10 | 0 |
| Rates and Taxes | 71 | 8 | 14 | 11 |
| Gas | 83 | 8 | 19 | 4 |
| Electric Light | 89 | 5 | 2 | 2 |
| Water | 95 | 3 | 3 | 0 |
| Van and Cart Repairs | 132 | 12 | 10 | 0 |
| Bakehouse Tools | 136 | 5 | 0 | 0 |
| Trade Expenses | 116 | 3 | 5 | 9 |
| Advertising | 121 | 2 | 15 | 0 |
| Total of Invoices | | 692 | 19 | 7 |

The credit notes should also be analysed under these headings and the sum obtained.

SUMMARY OF RETURNS

FOR THE THREE MONTHS ENDING 31ST MARCH, 1909

| | P.L. | £ | s. | d. |
|-------------------------|------|----|----|----|
| Flour | 34 | 5 | 10 | 0 |
| General Purchases | 56 | 8 | 5 | 7 |
| | | 13 | 15 | 7 |

These summaries should be entered as above in the Journal at the end of the period. The amounts of the purchases and expenses incurred under the enumerated divisions should be placed to the debit of the corresponding accounts in the Private Ledger.

In no case should the entries in the Journal be crowded together, as this at once encourages mistakes. In cases where an item is found to have been omitted, it is best to place it in with the invoices of the current month, noting in brackets its actual date.

LEDGER

In the Ledger are kept the accounts of all the persons and firms from whom goods are bought on credit. If the expenses, such as rent, rates and taxes, &c., are entered up in the Journal, accounts must be opened for the persons or firms in connection with whom

these expenses are incurred. When buying Ledgers, it is always advisable to get one having both the debit and credit sides on the one page—or in other words, paged, not folioed. The old-fashioned folioed Ledger is far more irksome to use than the more modern paged one.

At the time when the books are opened, a page in the Ledger must be allotted to each of the creditors, and the balance due entered on the Opening Ledger first or second line on the credit or right-hand side. On Accounts. the space provided above it is well to put not only the name of the person or firm from whom the goods are obtained, but also their address, and a note of the discount allowed at settlement. This in actual practice is found most useful. The balances being thus entered, and the accounts recorded in the index, the next consideration is the Source of Items entering or posting, as it is called, of the goods and ex- for Ledger. penses from the Journal. The account of the firm from whom the goods noted in the first invoice were obtained is turned up in the Ledger, and under the balance, which we will suppose already there, an entry is made thus:—

| 1908. | | P.L. | £ | s. | d. |
|---------|------------------|------|---|----|----|
| Dec. 31 | By Balance | 195 | 2 | 15 | 7 |
| 1909. | | J. | | | |
| Jan. 3 | " Goods | 1 | 7 | 14 | 8 |

The total of the invoice is alone inserted. If no balance was owing to the firm in question on the day on which the books were started, no account will have been opened for them. This must now be done, and the entry made as already stated. In opening fresh accounts it is essential that the name of the firm, with the page or folio of their account, should be entered in the index. If this is not done, a great deal of trouble will be occasioned by not being able to find any desired account, and may lead to two accounts being opened for one firm. The remaining invoices are posted to their respective accounts in like fashion. Attention must now be turned to the debit or left-hand side of the account. Here are posted the credit notes, which have been entered in red ink in the Journal, thus:—

| Dr. | | SIPS & Co., 7 STRAND, W.C. | | | | | | Cr. 173 | | | |
|---------|-----------------|----------------------------|---|----|----|---------|----------------|---------|----|----|----|
| 1909. | | J. | £ | s. | d. | 1908. | | P.L. | £ | s. | d. |
| Jan. 15 | To Returns..... | 4 | 1 | 16 | 4 | Dec. 31 | By Balance due | 195 | 22 | 3 | 6 |
| " 29 | " " | 7 | 2 | 5 | 6 | 1909. | | J. | | | |
| | | | | | | Jan. 8 | " Goods..... | 2 | 5 | 3 | 7 |
| | | | | | | " 10 | " " | 3 | 2 | 9 | 4 |
| | | | | | | " 19 | " " | 5 | 1 | 3 | 6 |
| | | | | | | " 26 | " " | 6 | 4 | 19 | 10 |

Allowances on eggs, &c., should be entered in the same manner as returns.

Having concluded the posting of the goods and returns from the Journal, it may now be supposed that the time has arrived when some of the accounts are paid, some discount being allowed. Entering Payments.
Opening the Cash Book, already described, the account of the firm to whom the first cheque was paid is found, and the cheque entered in the Ledger, thus:—

| 1909. | | C.B. | £ | s. | d. |
|--------|-----------------|------|----|----|----|
| Jan. 2 | To Cash..... | 2 | 32 | 10 | 0 |
| " " | " Discount..... | " | 0 | 12 | 6 |

The discount, if any, is entered underneath the cash, as shown above.
In all probability the cash, together with the discount, returns, and allowances (if any), will settle the account up to a certain Balancing an Account.
date. The two sides of the account should then be added, and the totals should agree, thus:—

Discount: 2½ % in a Month.

| Dr. | | | | | | ROBERTS & Co., 8 STRAIGHT STREET, E.C. | | | | | | Cr | | |
|--------|-----------------|------|----|----|----|--|-----------------|------|----|----|----|----|--|--|
| 1909. | | J. | £ | s. | d. | 1908. | | P.L. | £ | s. | d. | | | |
| Jan. 8 | To Returns..... | 3 | 1 | 3 | 2 | Dec. 31 | By Balance..... | 195 | 13 | 4 | 6 | | | |
| | | C.B. | | | | | | J. | | | | | | |
| " 10 | " Cash.. | 1 | 17 | 15 | 9 | 1909. | | | | | | | | |
| " " | " Discount..... | " | 0 | 9 | 2 | Jan. 2 | " Goods..... | 2 | 5 | 0 | 5 | | | |
| | | | | | | " 6 | " " | 4 | 1 | 3 | 2 | | | |
| | | | 19 | 8 | 1 | | | | 19 | 8 | 1 | | | |

If the two sides do not agree, it is probable that either the invoices have not been posted correctly, or the cash includes an item entered in the next month or excludes the last item noted.

When accounts are being paid, it will be found most convenient to check the statement with the Ledger account. In this way discrepancies are not passed over.

In the accounts of the gas company for gas supplied, of newspapers for advertising, &c., the amount of the debt incurred for such is noted just as in the case of goods, while the cash is also similarly entered, thus:—

| Dr. | | | | | | THE REDSTERE GAS COMPANY, 7 ELM STREET, REDSTERE | | | | | | Cr. 102 | | |
|--------|-------------|------|---|----|----|--|---------------------|------|---|----|----|---------|--|--|
| 1909. | | C.B. | £ | s. | d. | 1908. | | P.L. | £ | s. | d. | | | |
| Feb. 5 | To Cash.... | 2 | 8 | 2 | 5 | Dec. 31 | By Balance due..... | 195 | 8 | 2 | 5 | | | |
| | | | | | | | | J. | | | | | | |
| May 10 | " Cash.... | 5 | 8 | 19 | 4 | 1909. | | | | | | | | |
| | | | | | | Mar. 31 | " 1 Quarter's Gas | 30 | 8 | 19 | 4 | | | |

PRIVATE LEDGER

The Private Ledger contains accounts which are of a confidential nature, such as capital, profit and loss accounts, loans, premises accounts, &c. It also contains impersonal accounts, such as flour, general purchases, wages, rent, rates and taxes, gas, &c.

Some business men prefer to do away with this book, and to divide the Ledger into two sections, one doing the work of the *Dual Purpose of Ledger*. Ledger as already described, and the other half acting as a Private Ledger and containing all the accounts now to be described.

ASSETS AND LIABILITIES

Let us suppose that a baker and confectioner has decided to start this system of bookkeeping on a certain day, and has provided himself with the necessary books. The first business to be done when the all-important day arrives is to determine his assets and liabilities.

The former of these may briefly be summed under the following heads:—

Valuing
Assets.

1. Cash at bankers'.
2. Cash in hand.
3. Till money and petty cash.
4. Flour stock.
5. General purchases stock.
6. Bags, books, and stationery stock.
7. Coals stock.
8. Horse stock.
9. Forage stock.
10. Vans, carts, and harness stock, including barrows and stable tools.
11. Shop fittings and sundries.
12. Bakehouse tools and utensils-in-trade stock.
13. Goodwill.
14. Other assets.
15. Book debts.

1. *Cash at Bankers'.*—This is entered on the first page of the Cash Book as already described. If no cash account has been previously kept, it can be obtained from the bankers' pass book.

2. *Cash in Hand*, and 3. *Till Money and Petty Cash.*—These are found as described in the Takings Book, and are entered as the starting balance of the first quarterly cash summary account.

4. *Flour Stock.*—This is ascertained by counting the sacks unused and knowing their cost, working out the value of the whole, as well as the value of flour in sacks which may have been opened. A specimen of this is given later on, in connection with the Stock Book.

5. *General Purchases Stock.*—This may be divided into two classes, viz. bakehouse and shop. The former includes butter, eggs, &c., and, in

fact, all things except flour, which are part of the goods sold; while the latter consists of the cakes, &c., in stock, ready for sale, and also such goods, which are not made on the premises, as chocolates, sweets, biscuits, tea, &c. All these things are taken down in detail, the weights and prices apportioned, and their value determined. The detail is entered as described in the Stock Book, while the total is placed here amongst the assets.

6. *Bags, Books, and Stationery Stock*.—This stock ought to be most accurately calculated. It is far more satisfactory to count the packets of bags, books, &c., and ascertain their total cost, instead of placing the value of the whole at a round sum. All kinds and sizes of bags, customers' books, and any other books and stationery which will, in course of time, be used in the business, should be included in this stock. As with the stocks above, the detail should be entered in the Stock Book.

7. *Coal Stock*.—Very little requires to be said about this stock; it is not a difficult matter to decide whether it consists of one, two, or more tons. And since the price paid is known, the total cost is soon found.

8. *Horse Stock*.—The valuation of this stock presents more difficulty. It should be based upon two considerations, viz.: (1) the age of the horses and their present capability for work, and (2) their price when bought. As so much depends on these details, more cannot be said. The detail should be entered in the Stock Book.

9. *Forage Stock*.—This consists of corn, chaff, &c., and is found by following the lines set out in connection with the general purchases stock. The sundry items should be entered, priced, valued, and totalled in the Stock Book.

10. *Vans, Carts, and Harness Stock, including Barrows and Stable Tools*.—The value of the vans, carts, &c., comprising this stock depends largely on their cost and present condition. The harness and stable tools may be entered as a different stock from the vans, carts, and barrows, but it is advisable not to have too many subdivisions. As before, record should be made of this stock in the Stock Book.

11. *Shop Fixtures, Fittings, and Sundries*.—The value of the shop fixtures and fittings is adjudged by their estimated value when the business was bought, or their actual cost if put in at the owner's expense. In both cases the number of years these have been fitted must necessarily be brought into consideration. The shop sundries, such as chairs, glass stands, &c., should be priced out in the same manner as the general purchases, and may, if desired, be regarded as a separate stock from the fixtures and fittings.

12. *Bakehouse Tools and Utensils-in-Trade Stock*.—Under this category are included the troughs, bins, and all the ordinary bakehouse utensils. After these have been valued according to their cost prices, a certain amount should be deducted for deterioration. This would, of course, vary with the number of years the articles had been in use.

13. *Goodwill*.—The goodwill of a baker's business consists of its real value over and above that which is actually convertible and can be

realized. It consists of two parts: the goodwill of the rounds on the one hand, and that of the shop on the other.

It is usual, on the purchase of a business, to include in the purchase price such items as the lease, shop fixtures and fittings, tools and utensils in trade, horses, vans, carts, &c.; hire stock, improvements to buildings, &c. After the actual value of these has been ascertained, the owner is in a position to know what he has paid for the goodwill. The value of the goodwill depends principally on the price received for the bread; whether the rounds are easily worked and not unnecessarily extended. Moreover, it is greatly influenced by the style of the neighbourhood, the position of the shop—main road or otherwise—and the class of people served. In fact, so much depends upon these particular details that it is quite impossible to enter into a lengthy article on the subject.

14. *Other Assets*.—It is generally the case that a business has other assets besides the aforementioned. Thus, if shop and premises are owned or held under a lease by the baker and confectioner, these should undoubtedly be included and described as *freehold or leasehold premises*. Again, if extensive repairs or alterations have been made, such as the fitting of a refreshment room or the building of new ovens, these improvements will extend over a number of years, and therefore a proportionate amount should be included in the assets.

Where catering is done there will also be some *hire stock*, probably consisting of silver-plated goods, china, glass, tables, chairs, rout seats, &c. These should be counted and carefully priced out, taking into consideration their condition at the time of pricing. The detail should be entered in the Stock Book.

15. *Book Debts*.—This, the last asset which has to be considered, is usually already kept in the Bread Ledger, and the amount is obtained by merely totalling them on the desired day.

Near the end of the Private Ledger an account must be opened for the balance sheet, of which the above are the assets. The date must be inserted, along with the words "Balance Sheet". On the credit is written the word "Assets", and on the debit "Capital and Liabilities". The assets, which have been obtained above, must be entered on the credit side under the word "Assets". This being done, it will be now necessary to find the capital and liabilities by which these assets are balanced. To the latter of these attention will first be given.

The bulk of the liabilities will naturally be to the wholesale houses for goods supplied, and probably also a few for the expenses already mentioned, such as rent, rates, &c. On the day on which it is desired to start the books, the statements showing the exact liability to each firm should be collected, and the whole of them, not simply the total, entered on the debit side of the balance sheet mentioned above. These balances are now entered in the Ledger as described above, and the number of the page on which each is credited is

inserted in the column provided for that purpose in the balance sheet, thus:—

| | L. | £ | s. | d. | £ | s. | d. |
|-------------------------|----|----|----|----|---|----|----|
| Jackson & Co. | 1 | 17 | 4 | 3 | | | |
| Pit Flour Co., Ltd..... | 3 | 46 | 7 | 0 | | | |

The page of the Private Ledger on which the balance sheet is placed should be entered in the Ledger with each of the balances, thus:—

| | | | | | | | | | | | |
|-----|---------------------------------------|--|--|--|--|-----------------|------------------|-------------|---------|----------|---------|
| Dr. | DRAYTON & Co., 39 FOULEY STREET, E.C. | | | | | | | | | | Cr. |
| | | | | | | 1909. July 1 | By Balance | P.L. 195 | £ 18 | s. 16 | d. 0 |

It is well to enter the creditors in an inner column ruled for that purpose in the balance sheet, and to run their total out to the main column.

It being assumed that all the creditors are entered, attention must be given to the other liabilities. These may include money which has been borrowed for the purchase of the business, or part of the purchase price which has not yet been paid, together with the accrued interest on the same. If the first of these is the case, the name of person from whom the money was obtained, together with the amount, should be placed above the list of trade creditors already described, thus:—

| | P.L. | £ | s. | d. |
|-------------------------------------|------|-----|----|----|
| To C. Honk Loan A/c..... | 3 | 300 | 0 | 0 |
| " Interest accrued on same—less Tax | | 8 | 11 | 0 |

If the money is lent in the form of a mortgage, the word “mortgage” should be substituted for “loan”.

If some of the purchase money is unpaid, a similar account to the above should be opened, but should be headed only with the name, “K. Morris”, and entered, “By balance of purchase money due”. All such liabilities must be entered along with the loan described in the balance sheet.

The two sides of the balance sheet are now totalled, and the excess of the assets side over the liabilities will represent the capital in the business on that particular day.

If the business is owned by several partners the capital will have to be divided. In this case a capital account must be opened for each of the partners, and must bear their names, thus:—

L. Riddle, Capital Account.

SCOTTISH MILLERS AND BAKERS

JOHN HERDMAN, senior partner in the firm of John Herdman & Sons, Haymarket Mills, Edinburgh, comes of a family long associated with the milling industry. He was Master of the Merchant Company of Edinburgh in 1902-1903. In 1895 he became a member of the Leith Dock Commission.

ALEXANDER BURNETT HUTCHISON, born near Peterhead in 1862, served his apprenticeship as a baker in Peterhead, and after a time in Dundee started for himself in Aberdeen in 1883. The Central Bakery, from which his numerous retail shops are supplied, was built in 1891. Mr. Hutchison was one of the first members of the National Association of Master Bakers, and has been an active member of the Scottish Association, of which he was President in 1909. He has served on the Aberdeen Parish Council, and has been Deacon of the Incorporation of Bakers of Aberdeen and Deacon-Convener of the Incorporated Trades. He is a Justice of the Peace and an active Wesleyan Methodist.

JOHN MONTGOMERIE, son of a farmer near Lochgilphead, Argyllshire, served his apprenticeship to baking in Rothesay, and early became manager of the business. To gain experience he sailed as steward on several sailing ships, and ultimately became chief baker on the steamers of the Anchor Line. He then started in business as a baker in Rothesay, but soon migrated to Partick, Glasgow. He introduced the use of malt extract in bread, and the special flour registered as Bermaline has now a world-wide reputation. His Bermaline and other patent products are made in his extensive works at Haddington. Mr. Montgomerie is managing director and chairman of Montgomerie & Co., Limited, and recently completed the erection of a large new bakery at Ibrox, Glasgow, on unique lines. He has served on the Haddington Town and Parish Councils. His knowledge of law is very extensive and accurate for a layman.

SIR JOHN URE PRIMROSE, BART., son of a merchant miller and nephew of a former Lord Provost of Glasgow, was born in Glasgow in 1847. He is the senior partner of the firm of William Primrose & Sons, Centre Street Flour Mills, Glasgow. He entered the Glasgow Town Council in 1886, became a Magistrate in 1891, and was Lord Provost in 1902-1905. He was created a baronet in 1903, and is an honorary Doctor of Laws of Glasgow University.



JOHN HERDMAN
(Edinburgh)



A. B. HUTCHISON, J.P.
(Aberdeen)



JOHN MONTGOMERIE
(Glasgow)



SIR JOHN URE PRIMROSE, BART.
(Glasgow)

A MONTH'S TRANSACTIONS

The impersonal accounts will be best understood from a study of their use in a particular case. It will therefore be well to assume that a baker opens the necessary books on 30th June, 1909, and after keeping them in the manner described for the month of July, wishes to close them on the 31st. In order to ascertain his profit or loss for the month he must take stock again on the 31st July, 1909. This he does, and enters the detail in the Stock Book as already described. Stock-taking is one of those necessary duties that are not always undertaken with the care desirable, yet in the case of goods of an expensive kind carelessness or a slipshod and inexact method may readily cause a balance to appear considerably under or considerably over what it should be. If the business is a mixed one there may be a great many articles to count or weigh, but if the advice given in a previous chapter is carefully followed, the store kept in good order, only one package broken at a time, and the broken packages actually weighed and not guessed at, then the work need not be very burdensome. The whole of the entries in his books for the month—with the exception of those in the Takings and Expenses Books, for which adequate examples have been given, and which are very easily understood—will be shown, and from them his profit and loss account and final balance sheet compiled.

The Summary of Cash for the month of July, 1909, which is placed on this page for convenience, should be read after the example of the Cash Book given on pages 462, 463.

SUMMARY OF CASH FOR THE MONTH OF JULY, 1909

| <i>Dr.</i> | | P.L. | £ | s. | d. | 1909. July 31 | | By Expenses..... <div style="text-align:right">{ C.B. l and A.B. l }</div> | | £ | s. | d. | <i>Cr.</i> |
|------------|---|------|-----|----|----|------------------|---|---|-------------------------------|-----|----|----|------------|
| June 30 | To Cash in hand | 28 | 11 | 8 | 3 | " | " Amount Banked | { C.B. l and A.B. l } | | 146 | 17 | 7 | |
| " " | " "Cash—Till Money..... | " | | | | " | " Cash in hand | C.B. 1 | | | | | |
| " " | " "Cash—Petty Cash for Ex- penses..... | " | | | | " | " Cash—Till Money..... | | | | | | |
| | | | | | | | " Cash—Petty Cash for Ex- penses | | | | | | |
| July 31 | Takings..... | c.b. | 601 | 9 | 9 | " | | | carried to next Summary | | | | |
| " " | "Cheque returned—afterwards paid... | " | 2 | 0 | 0 | " | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | 452 | 19 | 5 | |
| | | | | | | | | | | 15 | 1 | 0 | |
| | | | | | | | | | | 614 | 18 | 0 | |

CASH BOOK

1 Dr.

CASH

| Date. | | Customers' Accounts Paid. | | | Carmen : Amt. Brought in. | | | Shop Takings. | | | Total. | | | Expenses. | | | Banked. | | |
|-------|----|---------------------------|----|----|---------------------------|----|----|---------------|----|----|--------|----|----|-----------|----|----|---------|----|----|
| 1909. | | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| | | To Balance at Bank... | | | | | | | | | | | | | | | | | |
| | | P.L. 28 | | | | | | | | | | | | | | | | | |
| July | 1 | 7 | 6 | 10 | 6 | 5 | 8 | 5 | 2 | 6 | 18 | 15 | 0 | 2 | 4 | 0 | 23 | 4 | 9 |
| " | 2 | 6 | 3 | 1 | 7 | 3 | 2 | 6 | 13 | 10 | 20 | 0 | 1 | 3 | 17 | 11 | | | |
| " | 3 | 12 | 4 | 2 | 8 | 1 | 1 | 7 | 12 | 8 | 27 | 17 | 11 | 14 | 18 | 8 | 37 | 1 | 5 |
| " | 5 | 8 | 13 | 0 | 8 | 12 | 4 | 6 | 11 | 2 | 23 | 16 | 6 | 2 | 2 | 5 | | | |
| " | 6 | 6 | 0 | 2 | 6 | 4 | 2 | 6 | 10 | 0 | 18 | 14 | 4 | 5 | 4 | 8 | | | |
| " | 7 | 7 | 3 | 5 | 7 | 3 | 8 | 5 | 17 | 5 | 20 | 4 | 6 | 4 | 19 | 0 | 48 | 3 | 0 |
| " | 8 | 7 | 14 | 3 | 7 | 12 | 0 | 6 | 0 | 3 | 21 | 6 | 6 | 1 | 16 | 8 | 2 | 0 | 0 |
| " | 9 | 9 | 8 | 6 | 6 | 14 | 2 | 6 | 2 | 1 | 22 | 4 | 9 | 1 | 17 | 0 | | | |
| " | 10 | 13 | 4 | 2 | 7 | 0 | 3 | 6 | 13 | 4 | 26 | 17 | 9 | 16 | 7 | 0 | 55 | 3 | 1 |
| " | 12 | 9 | 12 | 4 | 8 | 2 | 7 | 5 | 13 | 8 | 23 | 8 | 7 | 4 | 12 | 3 | | | |
| " | 13 | 7 | 4 | 3 | 6 | 14 | 10 | 5 | 19 | 2 | 19 | 18 | 3 | 1 | 18 | 10 | | | |
| " | 14 | 6 | 17 | 10 | 7 | 3 | 5 | 6 | 3 | 7 | 20 | 4 | 10 | 5 | 15 | 7 | 47 | 6 | 6 |
| " | 15 | 7 | 8 | 9 | 7 | 12 | 1 | 6 | 0 | 6 | 21 | 1 | 4 | 2 | 16 | 2 | | | |
| " | 16 | 8 | 5 | 0 | 6 | 2 | 9 | 6 | 1 | 9 | 20 | 9 | 6 | 2 | 1 | 2 | | | |
| " | 17 | 14 | 0 | 4 | 7 | 16 | 3 | 8 | 10 | 5 | 30 | 7 | 0 | 15 | 15 | 6 | 51 | 2 | 9 |
| " | 19 | 9 | 2 | 6 | 7 | 5 | 6 | 5 | 11 | 2 | 21 | 19 | 2 | 1 | 14 | 1 | | | |
| " | 20 | 5 | 15 | 0 | 6 | 12 | 5 | 5 | 19 | 8 | 18 | 7 | 1 | 1 | 8 | 7 | | | |
| " | 21 | 8 | 19 | 3 | 7 | 3 | 1 | 6 | 12 | 5 | 22 | 14 | 9 | 1 | 2 | 7 | 51 | 15 | 1 |
| " | 22 | 7 | 18 | 6 | 7 | 14 | 0 | 5 | 15 | 0 | 21 | 7 | 6 | 3 | 11 | 0 | | | |
| " | 23 | 9 | 9 | 8 | 6 | 2 | 4 | 7 | 8 | 6 | 23 | 0 | 6 | 5 | 16 | 7 | | | |
| " | 24 | 12 | 4 | 10 | 8 | 5 | 3 | 6 | 10 | 0 | 27 | 0 | 1 | 15 | 5 | 5 | 56 | 12 | 7 |
| " | 26 | 8 | 15 | 2 | 6 | 12 | 3 | 5 | 6 | 3 | 20 | 13 | 8 | 1 | 14 | 3 | | | |
| " | 27 | 6 | 12 | 0 | 7 | 4 | 2 | 5 | 8 | 6 | 19 | 4 | 8 | 3 | 2 | 7 | | | |
| " | 28 | 9 | 2 | 4 | 6 | 8 | 11 | 6 | 0 | 9 | 21 | 12 | 0 | 2 | 11 | 5 | 46 | 16 | 2 |
| " | 29 | 8 | 7 | 6 | 6 | 19 | 10 | 5 | 19 | 10 | 21 | 7 | 2 | 2 | 7 | 4 | | | |
| " | 30 | 9 | 0 | 5 | 6 | 2 | 5 | 5 | 1 | 2 | 20 | 4 | 0 | 1 | 5 | 7 | | | |
| " | 31 | 13 | 10 | 3 | 7 | 12 | 7 | 7 | 9 | 6 | 28 | 12 | 4 | 20 | 11 | 4 | 56 | 18 | 10 |
| | | 240 | 3 | 6 | 192 | 11 | 2 | 168 | 15 | 1 | 601 | 9 | 9 | 146 | 17 | 7 | 476 | 4 | 2 |
| | | P.L. 26 | | | P.L. 26 | | | P.L. 26 | | | C.B. 2 | | | A.B. 1 | | | | | |

CASH BOOK

CONTRA

Cr. 1

| Date. | Cheques Drawn in Favour of:— | What for:— | Folio. | Discount. | | | Amount of Cheque. | | | Monthly Totals. | | |
|-------------|--------------------------------------|-----------------|---------|------------------|-----|----|-------------------|----|----|-----------------|----|----|
| | | | | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 1909. | | | | | | | | | | | | |
| July 3 | By Pit Flour Co., Ltd. | Flour | L. 3 | 0 | 17 | 0 | 45 | 10 | 0 | | | |
| " " | " Cheque returned.... | — | C.B. 2 | | | | 2 | 0 | 0 | | | |
| " 7 | " Ripper & Kye, Ltd. | Flour | L. 4 | | | | 50 | 0 | 0 | | | |
| " " | " Self..... | Private | P.L. 2 | | | | 6 | 0 | 0 | | | |
| " " | " C. Honks..... | Interest | P.L. 3 | | | | 8 | 11 | 0 | | | |
| " 10 | " Pit Flour Co., Ltd. | Flour | L. 3 | 1 | 6 | 0 | 69 | 7 | 6 | | | |
| " " | " Jackson & Co. | G.P. | L. 1 | 0 | 8 | 7 | 16 | 15 | 8 | | | |
| " 12 | " Pershaw, Smith, & Co..... | G.P. | L. 2 | 0 | 0 | 9 | | | | | | |
| " " | " K. Jenkins..... | Insurance | P.L. 16 | | | | 1 | 3 | 6 | | | |
| " 14 | " Ripper & Kye, Ltd. | Flour | L. 4 | | | | 50 | 0 | 0 | | | |
| " " | " Sewell & Snap..... | G.P. | L. 5 | 0 | 6 | 1 | 23 | 19 | 6 | | | |
| " " | " Davis & Porter. | Van reprs. | P.L. 5 | | | | 3 | 14 | 6 | | | |
| " " | " R. Jones..... | Rent | P.L. 14 | | | | 27 | 10 | 0 | | | |
| " 19 | " Jackson & Co. | G.P. | L. 1 | 0 | 6 | 7 | 12 | 16 | 3 | | | |
| " 20 | " Ripper & Kye, Ltd. | Flour | L. 4 | | | | 23 | 7 | 6 | | | |
| " " | " Kingston, Ltd..... | Reprs.toCounter | P.L. 6 | | | | 2 | 14 | 0 | | | |
| " " | " Wingate & Co. | Oven reprs. | P.L. 7 | | | | 2 | 10 | 0 | | | |
| " " | " Slipper & Thomas... | Bags | L. 6 | 0 | 1 | 8 | 3 | 19 | 10 | | | |
| " " | " Gas Co. | Gas | P.L. 17 | | | | 8 | 2 | 5 | | | |
| " 26 | " Ripper & Kye, Ltd. | Flour | L. 4 | | | | 40 | 0 | 0 | | | |
| " " | " Smart Advert. Co... | Advert. | P.L. 23 | | | | 2 | 2 | 6 | | | |
| " " | " Auditor's Fees..... | — | P.L. 24 | | | | 3 | 3 | 0 | | | |
| " 29 | " Sewell & Snap..... | G.P. | L. 5 | 0 | 4 | 1 | 16 | 0 | 5 | | | |
| " " | " Telephone Calls..... | — | P.L. 24 | | | | 1 | 9 | 0 | | | |
| " " | " Cheque Book..... | — | P.L. 24 | | | | 0 | 8 | 4 | | | |
| | | | P.L. 25 | 3 | 10 | 9 | | | | 421 | 4 | 11 |
| " 31 | By Balance as per Bankers' Book..... | | | | | | 54 | 19 | 3 | 54 | 19 | 3 |
| | | | | | | | 476 | 4 | 2 | 476 | 4 | 2 |
| Dr. | 926 | 12 | 4 | Cr. | 912 | 11 | 6 | | | | | |
| Not Cleared | 56 | 18 | 10 | Not Cleared..... | 16 | 0 | 5 | | | | | |
| | | | | Balance as above | 54 | 19 | 3 | | | | | |
| | 983 | 11 | 2 | | 983 | 11 | 2 | | | | | |

ANALYSIS BOOK

1

DAILY EXPENSES

| Date. | Private Drawings. | | | Household. | | | General Purchases. | | | Wages. | | | Coals. | | | Bags, Books, and Stationery. | | | Bakelhouse Tools. | | |
|--------|-------------------|----|----|------------|----|----|--------------------|----|----|---------|----|----|---------|----|----|------------------------------|----|----|-------------------|----|----|
| | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| 1909. | | | | | | | | | | | | | | | | | | | | | |
| July 1 | | | | | | | 0 | 18 | 0 | | | | | | | | | | | | |
| " 2 | | | | 1 | 2 | 3 | 0 | 16 | 0 | | | | | | | 1 | 7 | 6 | | | |
| " 3 | 0 | 10 | 0 | 0 | 3 | 4 | 1 | 6 | 2 | 12 | 12 | 6 | | | | | | | | | |
| " 5 | | | | | | | 1 | 0 | 3 | | | | | | | | | | 0 | 8 | 4 |
| " 6 | | | | 0 | 13 | 6 | 0 | 19 | 2 | | | | | | | | | | | | |
| " 7 | | | | 0 | 9 | 8 | 2 | 1 | 6 | | | | 2 | 6 | 9 | | | | | | |
| " 8 | | | | 0 | 6 | 5 | 0 | 18 | 3 | | | | | | | | | | | | |
| " 9 | | | | | | | 0 | 16 | 9 | | | | | | | | | | | | |
| " 10 | 0 | 15 | 0 | 1 | 10 | 7 | 0 | 19 | 3 | 12 | 12 | 6 | | | | | | | | | |
| " 12 | | | | 0 | 3 | 8 | 0 | 15 | 4 | | | | | | | | | | | | |
| " 13 | 0 | 10 | 0 | | | | 0 | 14 | 2 | | | | | | | | | | | | |
| " 14 | | | | 0 | 12 | 4 | 0 | 19 | 3 | | | | | | | | | | 0 | 11 | 2 |
| " 15 | | | | 1 | 0 | 2 | 1 | 3 | 6 | | | | | | | | | | | | |
| " 16 | | | | | | | 0 | 10 | 1 | | | | | | | 0 | 12 | 6 | | | |
| " 17 | 0 | 5 | 0 | 0 | 14 | 10 | 1 | 1 | 2 | 12 | 12 | 6 | | | | | | | | | |
| " 19 | | | | 0 | 10 | 9 | 0 | 9 | 8 | | | | | | | | | | | | |
| " 20 | | | | 0 | 6 | 8 | 0 | 15 | 4 | | | | | | | | | | | | |
| " 21 | | | | | | | 0 | 18 | 3 | 0 | 3 | 2 | | | | | | | | | |
| " 22 | 1 | 0 | 0 | | | | 0 | 13 | 7 | | | | | | | | | | | | |
| " 23 | | | | 1 | 0 | 4 | 1 | 5 | 3 | | | | 2 | 6 | 9 | | | | 0 | 6 | 3 |
| " 24 | | | | | | | 0 | 19 | 11 | 12 | 12 | 6 | | | | | | | | | |
| " 26 | | | | 0 | 6 | 8 | 0 | 19 | 5 | | | | | | | | | | | | |
| " 27 | 0 | 10 | 0 | 1 | 2 | 1 | 0 | 16 | 2 | | | | | | | | | | | | |
| " 28 | | | | | | | 1 | 10 | 3 | | | | | | | | | | | | |
| " 29 | | | | 0 | 6 | 9 | 1 | 10 | 11 | | | | | | | | | | | | |
| " 30 | | | | | | | 0 | 19 | 10 | | | | | | | | | | | | |
| " 31 | 0 | 10 | 0 | 0 | 2 | 4 | 1 | 5 | 8 | 13 | 2 | 6 | | | | 1 | 0 | 4 | 0 | 13 | 11 |
| | 4 | 0 | 0 | 10 | 12 | 4 | 27 | 3 | 1 | 63 | 15 | 8 | 4 | 13 | 6 | 3 | 0 | 4 | 1 | 19 | 8 |
| | P.L. 2 | | | P.L. 12 | | | P.L. 11 | | | P.L. 13 | | | P.L. 20 | | | P.L. 21 | | | P.L. 7 | | |

ANALYSIS BOOK

JULY, 1909

1

| Credit Accounts Paid. | | | | Horse and Delivery Expenses. | | | Advertis- ing. | | | Trade Expenses. | | | | | | | | | Total. | | |
|---|---------|---|---|------------------------------|----|----|----------------|----|----|-----------------|----|----|---|----|----|---|----|-----|--------|----|----|
| NAME. | Amount. | | | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. | £ | s. | d. |
| Pershaw, Smith, & Co. (L. 2)..... | | | | 0 | 4 | 0 | | | | 1 | 2 | 0 | | | | | | | 2 | 4 | 0 |
| | | | | | | | | | | 0 | 12 | 2 | | | | | | | 3 | 17 | 11 |
| | | | | | | | | | | 0 | 6 | 8 | | | | | | | 14 | 18 | 8 |
| | | | | | | | | | | 0 | 13 | 10 | | | | | | | 2 | 2 | 5 |
| | | | | 3 | 7 | 6 | | | | 0 | 4 | 6 | | | | | | | 5 | 4 | 8 |
| | | | | | | | | | | 0 | 1 | 1 | | | | | | | 4 | 19 | 0 |
| | | | | | | | | | | 0 | 12 | 0 | | | | | | | 1 | 16 | 8 |
| | | | | | | | | | | 1 | 0 | 3 | | | | | | | 1 | 17 | 0 |
| | | | | | | | | | | 0 | 9 | 8 | | | | | | | 16 | 7 | 0 |
| | | | | | | | | | | 0 | 12 | 6 | | | | | | | 4 | 12 | 3 |
| | | | | | | | | | | 0 | 14 | 8 | | | | | | | 1 | 18 | 10 |
| | | | | 2 | 12 | 10 | | | | 1 | 0 | 0 | | | | | | | 5 | 15 | 7 |
| | | | | | | | 0 | 10 | 0 | 0 | 2 | 6 | | | | | | | 2 | 16 | 2 |
| | | | | | | | | | | 0 | 18 | 7 | | | | | | | 2 | 1 | 2 |
| | | | | | | | | | | 1 | 2 | 0 | | | | | | | 15 | 15 | 6 |
| | | | | | | | | | | 0 | 13 | 8 | | | | | | | 1 | 14 | 1 |
| | | | | | | | | | | 0 | 6 | 7 | | | | | | | 1 | 8 | 7 |
| | | | | | | | | | | 0 | 1 | 2 | | | | | | | 1 | 2 | 7 |
| | | | | 1 | 9 | 2 | | | | 0 | 8 | 3 | | | | | | | 3 | 11 | 0 |
| | | | | | | | | | | 0 | 18 | 0 | | | | | | | 5 | 16 | 7 |
| | | | | | | | | | | 1 | 13 | 0 | | | | | | | 15 | 5 | 5 |
| | | | | | | | | | | 0 | 8 | 2 | | | | | | | 1 | 14 | 3 |
| | | | | | | | | | | 0 | 14 | 4 | | | | | | | 3 | 2 | 7 |
| | | | | | | | | | | 1 | 1 | 2 | | | | | | | 2 | 11 | 5 |
| | | | | | | | | | | 0 | 9 | 8 | | | | | | | 2 | 7 | 4 |
| | | | | | | | | | 0 | 5 | 9 | | | | | | | 1 | 5 | 7 | |
| | | | | 2 | 12 | 4 | 0 | 12 | 6 | 0 | 11 | 9 | | | | | | 20 | 11 | 4 | |
| | 3 | 0 | 9 | 10 | 5 | 10 | 1 | 2 | 6 | 17 | 3 | 11 | | | | | | 146 | 17 | 7 | |
| P.L. 22 P.L. 23 P.L. 24 C.B. 1 | | | | | | | | | | | | | | | | | | | | | |

JOURNAL OR DAY BOOK

JULY, 1909

| 1909. | | | £ | s. | d. | £ | s. | d. |
|--------|--|------|----|----|----|-----|----|----|
| | 1 | | | | | | | |
| July 2 | Jackson & Co. — | | | | | | | |
| | 1 Case 1200 Eggs at 8/6..... | | 5 | 2 | 0 | | | |
| | 1 Cask Butter, 1 cwt. 3 lb. at 107/..... | L. 1 | 5 | 9 | 10 | 10 | 11 | 10 |
| | 2 | | | | | | | |
| " 3 | Pit Flour Co., Ltd.— | | | | | | | |
| | 25 Sacks Whites at 27/6..... | L. 3 | | | | 34 | 7 | 6 |
| | 3 | | | | | | | |
| " 5 | Pershaw, Smith, & Co.— | | | | | | | |
| | 12 Boxes Biscuits at 2/10..... | | 1 | 14 | 0 | | | |
| | 4 × 28 lb. Greengage Jam at 32/ .. | | 1 | 12 | 0 | | | |
| | 12 × 7 lb. Strawberry Jam at 36/..... | | 1 | 7 | 0 | | | |
| | 12 Boxes | L. 2 | 0 | 1 | 0 | | | |
| | Returns, £1, 12s. 6d. | L. 2 | | | | 4 | 14 | 0 |
| | 4 | | | | | | | |
| " 7 | Ripper & Kye, Ltd.— | | | | | | | |
| | 40 Sacks Best Flour at 29/9 | L. 4 | | | | 59 | 10 | 0 |
| | 5 | | | | | | | |
| " 8 | Sewell & Snap— | | | | | | | |
| | Sultanas and Currants..... | L. 5 | | | | 8 | 8 | 3 |
| | 6 | | | | | | | |
| " 10 | Jackson & Co.— | | | | | | | |
| | 2 ½-Cases 600 Eggs at 8/6 | L. 1 | | | | 5 | 2 | 0 |
| | 7 | | | | | | | |
| " " | Pit Flour Co., Ltd.— | | | | | | | |
| | 5 Sacks Wholemeal at 26/ | | 6 | 10 | 0 | | | |
| | 2 " Cones at 23/..... | | 2 | 6 | 0 | | | |
| | 20 " Whites at 27/6 | L. 3 | 27 | 10 | 0 | 36 | 6 | 0 |
| | 8 | | | | | | | |
| " " | Sewell & Snap— | | | | | | | |
| | Almonds, Whole and Ground..... | | 3 | 15 | 6 | | | |
| | 28 lb. Unsweeted Chocolate at 127/ | | 1 | 11 | 9 | | | |
| | 2 cwt. Icing Sugar at 24/6..... | L. 5 | 2 | 9 | 0 | 7 | 16 | 3 |
| | 9 | | | | | | | |
| " 12 | Jackson & Co.— | | | | | | | |
| | ½-Case Eggs returned, £2, 11s. | L. 1 | | | | | | |
| | 10 | | | | | | | |
| " 14 | Slipper & Thomas, Ltd.— | | | | | | | |
| | 10,000 Half-quartern Bags at 4/..... | | 2 | 0 | 0 | | | |
| | 5,000 1/ Cake Bags..... | | 1 | 2 | 6 | | | |
| | 2,000 Large Cake Bags..... | L. 6 | 0 | 19 | 0 | 4 | 1 | 6 |
| | 11 | | | | | | | |
| " 16 | Sewell & Snap— | | | | | | | |
| | 6 cwt. Castor Sugar at 16/10½..... | | 5 | 1 | 3 | | | |
| | 4 " Brown " at 15/ | | 3 | 0 | 0 | | | |
| | 2 " Crushed Lump at 19/ | L. 5 | 1 | 18 | 0 | 9 | 19 | 3 |
| | Carry Forward..... | | | | | 180 | 16 | 7 |

| 1909. | | | £ | s. | d. | £ | s. | d. |
|---------|--|---------|-----|----|----|-----|----|----|
| | <i>Brought Forward.....</i> | | | | | 180 | 16 | 7 |
| | 12 | | | | | | | |
| July 19 | Ripper & Kye, Ltd.— | | | | | | | |
| | 40 Sacks “Violets” at 28/9..... | L. 4 | | | | 57 | 10 | 0 |
| | 13 | | | | | | | |
| " " | Jackson & Co.— | | | | | | | |
| | 1 Case 1200 Eggs at 8/9..... | | 5 | 5 | 0 | | | |
| | 1 Cask Butter, 1 cwt. at 106/..... | L. 1 | 5 | 6 | 0 | | | |
| | | | | | | 10 | 11 | 0 |
| | 14 | | | | | | | |
| " 24 | Pershaw, Smith, & Co.— | | | | | | | |
| | 1 cwt. Cream of Tartar at 82/..... | | 4 | 2 | 0 | | | |
| | 6 × 28 lb. Apricot Jam at 34/..... | | 2 | 11 | 0 | | | |
| | 28 lb. Carraway Seeds at 4d. | L. 2 | 0 | 9 | 4 | | | |
| | | | | | | 7 | 2 | 4 |
| | 15 | | | | | | | |
| " " | Ripper & Kye, Ltd.— | | | | | | | |
| | 20 Sacks Best Flour at 29/6 | | 29 | 10 | 0 | | | |
| | 4 " Wholemeal at 26/..... | | 5 | 4 | 0 | | | |
| | 2 " Cones at 23/..... | L. 4 | 2 | 6 | 0 | | | |
| | | | | | | 37 | 0 | 0 |
| | 16 | | | | | | | |
| " 27 | Sewell & Snap— | | | | | | | |
| | 1 cwt. Citron Peel at 70/ | L. 5 | | | | 3 | 10 | 0 |
| | 17 | | | | | | | |
| " 28 | Pit Flour Co., Ltd.— | | | | | | | |
| | 24 Sacks Best Whites at 30/..... | L. 3 | | | | 36 | 0 | 0 |
| | 18 | | | | | | | |
| " 29 | Jackson & Co.— | | | | | | | |
| | 1 Case 1200 Eggs at 9/3..... | | 5 | 11 | 0 | | | |
| | 1 Cask Best Butter, 1 cwt. 2 lb. at 106/ ... | L. 1 | 5 | 7 | 11 | | | |
| | | | | | | 10 | 18 | 11 |
| | 19 | | | | | | | |
| " 30 | Sewell & Snap— | | | | | | | |
| | 2 cwt. Mixed Peel at 30/6 | | 3 | 1 | 0 | | | |
| | 1 cwt. Cherries at 7d. lb. | | 3 | 5 | 4 | | | |
| | 28 lb. Strip Cokernut at 38/..... | | 0 | 9 | 6 | | | |
| | 2 cwt. Pearl Sugar at 23/..... | | 2 | 6 | 0 | | | |
| | 4 cwt. Castor Sugar at 16/10..... | L. 5 | 3 | 7 | 4 | | | |
| | | | | | | 12 | 9 | 2 |
| | 20 | | | | | | | |
| " " | Pershaw, Smith, & Co.— | | | | | | | |
| | Essences of Lemon and Vanilla..... | L. 2 | | | | 5 | 14 | 4 |
| | | | | | | 361 | 12 | 4 |
| | SUMMARY OF PURCHASES | | | | | | | |
| | FOR THE MONTH OF JULY, 1909 | | | | | | | |
| | Flour | P.L. 10 | 260 | 13 | 6 | | | |
| | General Purchases..... | 11 | 96 | 17 | 4 | | | |
| | Bags, Books, and Stationery..... | 21 | 4 | 1 | 6 | | | |
| | | | 361 | 12 | 4 | | | |
| | Returns and Allowances for July, 1909. | | | | | | | |
| | General Purchases— | | | | | | | |
| | Pershaw, Smith, & Co..... | J. 1 | 1 | 12 | 6 | | | |
| | Jackson & Co..... | J. 2 | 2 | 11 | 0 | | | |
| | | P.L. 11 | 4 | 3 | 6 | | | |

Italics denote an entry in red ink.

LEDGER ACCOUNTS

Discount: 2½ % one month.

1

| Dr. | | | JACKSON & Co., 32 LIME STREET, WILLESDEN, N.W. | | | | | | | | | Cr. | | |
|---------|---------------|--------|--|----|----|---------|----------------|------|----|----|----|-----|--|--|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. | | | |
| July 11 | To Cash..... | 1 | 16 | 15 | 8 | June 30 | By Balance.... | 28 | 17 | 4 | 3 | | | |
| " " | " Discount... | " | 0 | 8 | 7 | | | J. | | | | | | |
| " 12 | " Returns... | 2 | 2 | 11 | 0 | July 2 | " Goods..... | 1 | 10 | 11 | 10 | | | |
| " 19 | " Cash..... | C.B. 1 | 12 | 16 | 3 | " 10 | " " | " | 5 | 2 | 0 | | | |
| " " | " Discount... | " | 0 | 6 | 7 | " 19 | " " | 2 | 10 | 11 | 0 | | | |
| " 31 | " Balance.... | e/d | 21 | 9 | 11 | " 29 | " " | 3 | 10 | 18 | 11 | | | |
| | | | 54 | 8 | 0 | | | | 54 | 8 | 0 | | | |
| | | | | | | " 31 | " Balance.... | b/d | 21 | 9 | 11 | | | |

Discount: 1¼ % one month.

2

| Dr. | | | PERSHAW, SMITH, & Co., THE CRESCENT, TOTTENHAM | | | | | | | | | Cr. | | |
|--------|----------------|--------|--|----|----|--------|---------------|-----|----|----|----|-----|--|--|
| 1909. | | J. | £ | s. | d. | 1909. | | J. | £ | s. | d. | | | |
| July 5 | To Returns.... | 1 | 1 | 12 | 6 | July 5 | By Goods..... | 1 | 4 | 14 | 0 | | | |
| " 12 | " Cash..... | A.B. 1 | 3 | 0 | 9 | " 24 | " " | 2 | 7 | 2 | 4 | | | |
| " " | " Discount... | C.B. 1 | 0 | 0 | 9 | " 30 | " " | 3 | 5 | 14 | 4 | | | |
| " 31 | " Balance.... | e/d | 12 | 16 | 8 | | | | 17 | 10 | 8 | | | |
| | | | 17 | 10 | 8 | " 31 | " Balance.... | b/d | 12 | 16 | 8 | | | |

Discount: 6d. a sack in 7 days.

3

| Dr. | | | PIT FLOUR Co., LTD., VAUXHALL ROAD, REDHAM | | | | | | | | | Cr. | | |
|--------|---------------|------|--|----|----|---------|----------------|------|-----|----|----|-----|--|--|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. | | | |
| July 3 | To Cash..... | 1 | 45 | 10 | 0 | June 30 | By Balance.... | 28 | 46 | 7 | 0 | | | |
| " " | " Discount... | " | 0 | 17 | 0 | | | J. | | | | | | |
| " 10 | " Cash..... | " | 69 | 7 | 6 | July 3 | " Goods..... | 1 | 34 | 7 | 6 | | | |
| " " | " Discount... | " | 1 | 6 | 0 | " 10 | " " | " | 36 | 6 | 0 | | | |
| " 31 | " Balance.... | e/d | 36 | 0 | 0 | " 28 | " " | 2 | 36 | 0 | 0 | | | |
| | | | 153 | 0 | 6 | | | | 153 | 0 | 6 | | | |
| | | | | | | " 31 | " Balance.... | b/d | 36 | 0 | 0 | | | |

No discount allowed.

4

| Dr. | | | RIPPER & KYE, LTD., MARK LANE, E.C. | | | | | | | | | Cr. | | |
|--------|---------------|------|-------------------------------------|----|----|---------|----------------|------|-----|----|----|-----|--|--|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. | | | |
| July 7 | To Cash..... | 1 | 50 | 0 | 0 | June 30 | By Balance.... | 28 | 63 | 17 | 6 | | | |
| " 14 | " " | " | 50 | 0 | 0 | | | J. | | | | | | |
| " 20 | " " | " | 23 | 7 | 6 | July 7 | " Goods..... | 1 | 59 | 10 | 0 | | | |
| " 2 | " " | " | 40 | 0 | 0 | " 19 | " " | 2 | 57 | 10 | 0 | | | |
| " 31 | " Balance.... | e/d | 54 | 10 | 0 | " 24 | " " | " | 37 | 0 | 0 | | | |
| | | | 217 | 17 | 6 | | | | 217 | 17 | 6 | | | |
| | | | | | | " 31 | " Balance.... | b/d | 54 | 10 | 0 | | | |

Discount: 1¼% one month.

5

| Dr. | | | SEWELL & SNAP, 36 EPSOM STREET, S.W. | | | | | | Cr. | | |
|---------|----------------|------|--------------------------------------|----|----|---------|----------------|------|-----|----|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| July 14 | To Cash..... | 1 | 23 | 19 | 6 | June 30 | By Balance.... | 28 | 24 | 5 | 7 |
| " " | " Discount... | " | 0 | 6 | 1 | | | J. | | | |
| " 29 | " Cash..... | " | 16 | 0 | 5 | July 8 | " Goods..... | 1 | 8 | 8 | 3 |
| " " | " Discount... | " | 0 | 4 | 1 | " 10 | " " | " | 7 | 16 | 3 |
| " 31 | " Balance..... | e/d | 25 | 18 | 5 | " 16 | " " | 2 | 9 | 19 | 3 |
| | | | | | | " 27 | " " | " | 3 | 10 | 0 |
| | | | | | | " 30 | " " | 3 | 12 | 9 | 2 |
| | | | 66 | 8 | 6 | | | | 66 | 8 | 6 |
| | | | | | | " 31 | " Balance.... | b/d | 25 | 18 | 5 |

Discount: 2% in 14 days.

6

| Dr. | | | SLIPPER & THOMAS, LTD., MILTON WORKS, FULHAM. | | | | | | Cr. | | |
|---------|---------------|------|---|----|----|---------|---------------|----|-----|----|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | J. | £ | s. | d. |
| July 20 | To Cash..... | 1 | 3 | 19 | 10 | July 14 | By Goods..... | 2 | 4 | 1 | 6 |
| " " | " Discount... | " | 0 | 1 | 8 | | | | | | |
| | | | 4 | 1 | 6 | | | | 4 | 1 | 6 |

PRIVATE LEDGER ACCOUNTS

| Dr. | | | CAPITAL ACCOUNT | | | | | | Cr. | | |
|---------|--------------------------|------|-----------------|----|----|---------|---|------|-----|----|----|
| 1909. | | P.L. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| July 31 | To Private Drawings..... | 2 | 14 | 2 | 4 | June 30 | By Balance..... | 28 | 723 | 9 | 0 |
| " " | " Interest—less Tax..... | 3 | 1 | 8 | 6 | July 31 | " Net Profit of Business for one month... | 27 | 46 | 12 | 5 |
| " " | " Balance..... | e/d | 754 | 10 | 7 | | | | 770 | 1 | 5 |
| | | | 770 | 1 | 5 | | | | | | |
| | | | | | | " " | " Balance..... | b/d | 754 | 10 | 7 |

| Dr. | | | PRIVATE DRAWING ACCOUNT | | | | | | Cr. | | |
|--------|---------------------------|---------|-------------------------|----|----|---------|--------------------|------|-----|----|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| July 7 | To Cash..... | 1 | 6 | 0 | 0 | July 31 | By Capital A/c.... | 1 | 14 | 2 | 4 |
| " 31 | " " | A.B. 1 | 4 | 0 | 0 | | | | | | |
| " " | " Household Expenses..... | P.L. 12 | 4 | 2 | 4 | | | | | | |
| | | | 14 | 2 | 4 | | | | 14 | 2 | 4 |

| Dr. | | | BAKEHOUSE TOOLS AND UTENSILS-IN-TRADE ACCOUNT | | | | | | Cr. | | |
|---------|--------------------------------|---------|---|----|----|---------|--|---------|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| June 30 | To Stock on hand (S.B. 8)..... | P.L. 28 | 86 | 2 | 7 | July 31 | By Profit and Loss A/c for maintenance of Ovens and Tools..... | P.L. 27 | 3 | 12 | 3 |
| July 20 | " Oven Repairs | C.B. 1 | 2 | 10 | 0 | | " Balance | c/d | 87 | 0 | 0 |
| " 31 | " Cash Purchases | A.B. 1 | 1 | 19 | 8 | " " | | | | | |
| | | | 90 | 12 | 3 | | | | 90 | 12 | 3 |
| " " | " Balance..... | b/d | 87 | 0 | 0 | | | | | | |

| Dr. | | | HIRE STOCK ACCOUNT | | | | | | Cr. | | |
|---------|--------------------------------|---------|--------------------|----|----|---------|-----------------------------|---------|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| June 30 | To Stock on hand (S.B. 9)..... | P.L. 28 | 54 | 5 | 9 | July 31 | By Profit and Loss A/c..... | P.L. 27 | 0 | 9 | 1 |
| | | | 54 | 5 | 9 | " " | " Balance..... | c/d | 53 | 16 | 8 |
| July 31 | " Balance... .. | b/d | 53 | 16 | 8 | | | | 54 | 5 | 9 |

| Dr. | | | GOODWILL ACCOUNT | | | | | | Cr. | | |
|---------|-------------------|---------|------------------|----|----|--|--|--|-----|--|--|
| 1909. | | | £ | s. | d. | | | | | | |
| June 30 | ✓ To Balance..... | P.L. 28 | 500 | 0 | 0 | | | | | | |

| Dr. | | | FLOUR ACCOUNT | | | | | | Cr. | | |
|---------|--------------------------------|---------|---------------|----|----|---------|---|---------|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| June 30 | To Stock on hand (S.B. 1)..... | P.L. 28 | 64 | 10 | 0 | July 31 | By Profit and Loss A/c for amount consumed..... | P.L. 27 | 265 | 18 | 6 |
| July 31 | " One Month's Purchases..... | J. 3 | 260 | 13 | 6 | " " | " Stock on hand (S.B. 1)..... | c/d | 59 | 5 | 0 |
| | | | 325 | 3 | 6 | | | | 325 | 3 | 6 |
| " " | " Stock on hand | b/d | 59 | 5 | 0 | | | | | | |

| Dr. | | GENERAL PURCHASES ACCOUNT | | | | | | | | | | Cr. | | 11 |
|---------|------------------|---------------------------|-----|----|----|---------|-----------------|------|-----|----|----|-----|--|----|
| 1909. | | | £ | s. | d. | 1909. | | J. | £ | s. | d. | | | |
| June 30 | To Stock on hand | P.L. | | | | July 31 | By Returns..... | 3 | 4 | 3 | 6 | | | |
| | (s.B. 2)..... | 28 | 58 | 3 | 2 | " " | " Profit and | | | | | | | |
| July 31 | " Cash Pur- | A.B. | | | | | Loss A/c for | | | | | | | |
| | chases | 1 | 27 | 3 | 1 | | amount con- | P.L. | | | | | | |
| " " | " Credit Pur- | J. | | | | " " | sumed..... | 27 | 116 | 17 | 10 | | | |
| | chases | 3 | 96 | 17 | 4 | | " Stock on hand | c/d | 61 | 2 | 3 | | | |
| | | | | | | | (s.B. 2)..... | | | | | | | |
| | | | 182 | 3 | 7 | | | | 182 | 3 | 7 | | | |
| " " | " Stock on hand | b/d | 61 | 2 | 3 | | | | | | | | | |

| Dr. | | HOUSEHOLD EXPENSES AND KEEP OF ASSISTANTS ACCOUNT | | | | | | | | | | Cr. | | 12 |
|---------|--------------|---|----|----|----|---------|-----------------|------|----|----|----|-----|--|----|
| 1909. | | A.B. | £ | s. | d. | 1909. | | | £ | s. | d. | | | |
| July 31 | To Cash..... | 1 | 10 | 12 | 4 | July 31 | By Profit and | | | | | | | |
| | | | | | | | Loss A/c for | P.L. | | | | | | |
| | | | | | | " " | keep of As- | 27 | 6 | 10 | 0 | | | |
| | | | | | | | sistants..... | | | | | | | |
| | | | | | | " " | " Private Draw- | 2 | 4 | 2 | 4 | | | |
| | | | | | | | ing A/c..... | | | | | | | |
| | | | 10 | 12 | 4 | | | | 10 | 12 | 4 | | | |

| Dr. | | WAGES ACCOUNT | | | | | | | | | | Cr. | | 13 |
|---------|--------------|---------------|----|----|----|---------|---------------|------|----|----|----|-----|--|----|
| 1909. | | A.B. | £ | s. | d. | 1909. | | | £ | s. | d. | | | |
| July 31 | To Cash..... | 1 | 63 | 15 | 8 | July 31 | By Profit and | P.L. | | | | | | |
| | | | | | | | Loss A/c..... | 27 | 63 | 15 | 8 | | | |

| Dr. | | RENT ACCOUNT | | | | | | | | | | Cr. | | 14 |
|---------|----------------|--------------|----|----|----|---------|-------------------|------|----|----|----|-----|--|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | | £ | s. | d. | | | |
| July 14 | To Cash..... | 1 | 27 | 10 | 0 | June 30 | By Balance due to | P.L. | | | | | | |
| " 31 | " Balance Rent | | | | | July 31 | R. Jones..... | 28 | 27 | 10 | 0 | | | |
| | for One Month | c/d | 9 | 3 | 4 | | " Profit and | | | | | | | |
| | | | | | | | Loss A/c..... | 27 | 9 | 3 | 4 | | | |
| | | | 36 | 13 | 4 | | | | 36 | 13 | 4 | | | |
| " " | " Balance due | | | | | " " | R. Jones..... | b/d | 9 | 3 | 4 | | | |

| Dr. | | LOCAL RATES ACCOUNT | | | | | | | | | | Cr. | | 15 |
|---------|------------------|---------------------|---|----|----|---------|------------------|------|---|----|----|-----|--|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. | | | |
| July 31 | To Proportion of | | | | | July 31 | By Profit and | P.L. | | | | | | |
| | Rates due... | c/d | 3 | 5 | 2 | | Loss A/c..... | 27 | 3 | 5 | 2 | | | |
| " " | " Balance due... | | | | | " " | " Balance due... | b/d | 3 | 5 | 2 | | | |

| Dr. | | | INSURANCE ACCOUNT | | | | | | Cr. | | |
|---------|---------------------------|--------|-------------------|----|----|---------|-----------------------------|---------|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| July 12 | To Cash per Jenkins | C.B. 1 | 1 | 3 | 6 | July 31 | By Profit and Loss A/c..... | P.L. 27 | 1 | 3 | 6 |
| | | | | | | | | | | | |

| Dr. | | | GAS ACCOUNT | | | | | | Cr. | | |
|---------|------------------|-----|-------------|----|----|---------|----------------------------|-----|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| July 20 | To Cash..... | 1 | 8 | 2 | 5 | June 30 | By Balance due... | 28 | 8 | 2 | 5 |
| " 31 | " Balance due... | c/d | 3 | 2 | 0 | July 31 | " Profit and Loss A/c..... | 27 | 3 | 2 | 0 |
| | | | 11 | 4 | 5 | | | | 11 | 4 | 0 |
| | | | | | | " " | " Balance due... | b/d | 3 | 2 | 0 |

| Dr. | | | ELECTRIC LIGHT ACCOUNT | | | | | | Cr. | | |
|---------|-----------------|-----|------------------------|----|----|---------|----------------------------|-----|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| July 31 | To Balance..... | c/d | 6 | 19 | 1 | June 30 | By Balance due... | 28 | 5 | 1 | 4 |
| | | | | | | July 31 | " Profit and Loss A/c..... | 27 | 1 | 17 | 9 |
| | | | 6 | 19 | 1 | | | | 6 | 19 | 1 |
| | | | | | | " " | " Balance due... | b/d | 6 | 19 | 1 |

| Dr. | | | WATER ACCOUNT | | | | | | Cr. | | |
|---------|-------------------------------|-----|---------------|----|----|---------|----------------------------|-----|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| July 31 | To Proportion of Rate due.... | c/d | 3 | 0 | 0 | June 30 | By Balance due... | 28 | 2 | 5 | 0 |
| | | | | | | July 31 | " Profit and Loss A/c..... | 27 | 0 | 15 | 0 |
| | | | 3 | 0 | 0 | | | | 3 | 0 | 0 |
| | | | | | | " " | " Balance due... | b/d | 3 | 0 | 0 |

| Dr. | | | COALS ACCOUNT | | | | | | Cr. | | |
|---------|------------------|---------|---------------|----|----|---------|-----------------------------|---------|-----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. |
| June 30 | To Stock on hand | P.L. 28 | 0 | 17 | 6 | July 31 | By Profit and Loss A/c..... | P.L. 27 | 4 | 16 | 0 |
| July 31 | " Cash | A.B. 1 | 4 | 13 | 6 | " " | " Stock on hand | e/d | 0 | 15 | 0 |
| | | | 5 | 11 | 0 | | | | 5 | 11 | 0 |
| " " | " Stock on hand | b/d | 0 | 15 | 0 | | | | | | |

| Dr. | | BAGS, BOOKS, PAPER, AND STATIONERY ACCOUNT | | | | | | | | | | Cr. | | 21 |
|---------|------------------------------------|--|----|----|----|---------|-----------------------------------|------------|--|----|----|-----|--|----|
| 1909. | | | £ | s. | d. | 1909. | | | | £ | s. | d. | | |
| June 30 | To Stock on hand (s. B. 3)..... | P.L. 28 | 13 | 9 | 6 | July 31 | By Profit and Loss A/c..... | P.L. 27 | | 7 | 4 | 4 | | |
| July 31 | " Cash Pur- chases | A.B. 1 | 3 | 0 | 4 | " " | " Stock on hand (s. B. 3)..... | c/d | | 13 | 7 | 0 | | |
| " " | " Credit Pur- chases | J. 3 | 4 | 1 | 6 | | | | | | | | | |
| | | | 20 | 11 | 4 | | | | | 20 | 11 | 4 | | |
| " " | " Stock on hand | b/d | 13 | 7 | 0 | | | | | | | | | |

| Dr. | | | HORSE AND DELIVERY EXPENSES ACCOUNT | | | | | | Cr. | | | 22 |
|---------|---|------------|-------------------------------------|----|----|---------|-----------------------------------|------------|-----|----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. | |
| June 30 | To Stock on hand (s. B. 5) of For- age..... | P.L. 28 | 2 | 10 | 0 | July 31 | By Profit and Loss A/c..... | P.L. 27 | 11 | 10 | 10 | |
| | | | | | | " " | " Stock on hand (s. B. 5)..... | | | | | |
| July 31 | " Cash | A.B. 1 | 10 | 5 | 10 | | | e/d | 1 | 5 | 0 | |
| | | | 12 | 15 | 10 | | | | 12 | 15 | 10 | |
| " " | " Stock on hand of Forage.... | b/d | 1 | 5 | 0 | | | | | | | |

| Dr. | | | ADVERTISING ACCOUNT | | | | | | Cr. | | | 23 |
|---------|--------------------------|--------|---------------------|----|----|---------|-----------------------------|---------|-----|----|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | £ | s. | d. | |
| July 26 | To Smart Advert. Co..... | C.B. 1 | 2 | 2 | 6 | July 31 | By Profit and Loss A/c..... | P.L. 27 | 3 | 5 | 0 | |
| " 31 | " Cash | A.B. 1 | 1 | 2 | 6 | | | | | | | |
| | | | 3 | 5 | 0 | | | | 3 | 5 | 0 | |
| | | | | | | | | | | | | |

| Dr. | | | TRADE EXPENSES ACCOUNT | | | | | | Cr. | | | 24 |
|---------|------------------|-----------|------------------------|----|----|---------|--------------------|------|-----|----|----|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | | £ | s. | d. | |
| July 26 | To Auditor's Fee | 1 | 3 | 3 | 0 | July 31 | By Profit and Loss | P.L. | | | | |
| " 29 | " Telephone | | | | | | A/c..... | 27 | 22 | 4 | 3 | |
| " " | " Calls..... | " | 1 | 9 | 0 | | | | | | | |
| " " | " Cheque Book.. | " | 0 | 8 | 4 | | | | | | | |
| " 31 | " Cash Sundries | A.B. 1 | 17 | 3 | 11 | | | | | | | |
| | | | 22 | 4 | 3 | | | | 22 | 4 | 3 | |
| | | | | | | | | | | | | |

| Dr. | | | DISCOUNT ACCOUNT | | | | | | Cr. | | | 25 |
|---------|--------------------------------|------------|------------------|----|----|---------|------------------|---|------|---|----|----|
| 1909. | | | £ | s. | d. | 1909. | | | C.B. | £ | s. | d. |
| July 31 | To Profit and Loss A/c..... | P.L. 27 | 3 | 10 | 9 | July 31 | By Sundries..... | 1 | | 3 | 10 | 9 |
| | | | | | | | | | | | | |

A Trial Balance is a summary of the balances of the accounts after all the posting has been done, but before the stocks have been entered, in order to test the accuracy of the books before proceeding to make out the profit and loss accounts or balance sheet. Thus the trial balance of the accounts given off will be as follows:—

| Dr. | | TRIAL BALANCE, 31st JULY, 1909 | | | | Cr. | | | |
|-------------------------|--------|--------------------------------|----|----|-------------------------|--------|------|----|----|
| | C.B. | £ | s. | d. | | L. | £ | s. | d. |
| Cash at Bank | 1 | 54 | 19 | 3 | Jackson & Co..... | 1 | 21 | 9 | 11 |
| Cash in hand, &c. | 2 | 15 | 1 | 0 | Pershaw, Smith, & Co. | 2 | 12 | 16 | 8 |
| Private Drawing A/c... | P.L. 2 | 10 | 0 | 0 | Pit Flour Co., Ltd..... | 3 | 36 | 0 | 0 |
| Horse Stock A/c..... | 4 | 35 | 0 | 0 | Ripper & Kye, Ltd..... | 4 | 54 | 10 | 0 |
| Vans, Carts, and Har- | | | | | Sewell & Snap..... | 5 | 25 | 18 | 5 |
| ness Stock A/c..... | 5 | 71 | 5 | 0 | | | 150 | 15 | 0 |
| Shop Fixtures, &c., A/c | 6 | 81 | 17 | 4 | Capital A/c..... | P.L. 1 | 723 | 9 | 0 |
| Bakehouse Tools A/c... | 7 | 90 | 12 | 3 | C. Honk Loan A/c..... | 3 | 300 | 0 | 0 |
| Hire Stock A/c | 8 | 54 | 5 | 9 | Electric Light A/c..... | 18 | 5 | 1 | 4 |
| Goodwill A/c..... | 9 | 500 | 0 | 0 | Water A/c | 19 | 2 | 5 | 0 |
| Flour A/c..... | 10 | 325 | 3 | 6 | Discount A/c..... | 25 | 3 | 10 | 9 |
| General Purchases A/c | 11 | 178 | 0 | 1 | Gross Profit and Loss | | | | |
| Household Expenses, | | | | | A/c—Takings..... | 26 | 601 | 9 | 9 |
| &c., A/c | 12 | 10 | 12 | 4 | | | | | |
| Wages A/c..... | 13 | 63 | 15 | 8 | | | | | |
| Insurance A/c..... | 16 | 1 | 3 | 6 | | | | | |
| Coals A/c | 20 | 5 | 11 | 0 | | | | | |
| Bags, Books, &c., A/c.. | 21 | 20 | 11 | 4 | | | | | |
| Horse and Delivery | | | | | | | | | |
| Expenses A/c..... | 22 | 12 | 15 | 10 | | | | | |
| Advertising A/c..... | 23 | 3 | 5 | 0 | | | | | |
| Trade Expenses A/c... | 24 | 22 | 4 | 3 | | | | | |
| Book Debts | 26 | 230 | 7 | 9 | | | | | |
| | | 1786 | 10 | 10 | | | 1786 | 10 | 10 |

GROSS PROFIT AND LOSS ACCOUNT

| Dr. | | | | | | FROM 30TH JUNE TO 31ST JULY, 1909 | | | | | | Cr. 26 | | | | | |
|---------|-----------------------------------|------|-----|----|----|-----------------------------------|----------------------------|----------|---|--|--|--------|---------|----|---|--|--|
| 1909. | | P.L. | £ | s. | d. | 1909. | | | | | | £ | s. | d. | | | |
| June 30 | To Book Debts... | 28 | 230 | 7 | 9 | July 31 | By Takings— | | | | | | | | | | |
| July 31 | " Flour consumed..... | 10 | 235 | 18 | 6 | | Customers £ s. d. | C.B. | | | | | | | | | |
| " " | " General Purchases consumed..... | 11 | 116 | 17 | 10 | | A/cs Paid 240 3 6 | 1 | | | | | | | | | |
| " " | " Balance being Gross Profit.. | 27 | 191 | 8 | 2 | | Carmen : Amt. brt. in..... | 192 11 2 | " | | | | | | | | |
| | | | | | | | Shop Takings 168 15 1 | " | | | | | | | | | |
| | | | | | | " " | By Book Debts..... | c/d | | | | | 601 9 9 | | | | |
| | | | | | | | | | | | | | 203 2 6 | | | | |
| | | | 804 | 12 | 3 | | | | | | | | 804 | 12 | 3 | | |
| " " | " Book Debts... | b/d | 203 | 2 | 6 | | | | | | | | | | | | |

NET PROFIT AND LOSS ACCOUNT

Dr.

FROM 30TH JUNE TO 31ST JULY, 1909

Cr. 27

| | P.L. | £ | s. | d. | | P.L. | £ | s. | d. |
|---|------|-----|----|----|--------------------|------|-----|----|----|
| To Keep of Assistants | 12 | 6 | 10 | 0 | By Gross Profit... | 26 | 191 | 8 | 2 |
| " Wages | 13 | 63 | 15 | 8 | " Discount | 25 | 3 | 10 | 9 |
| " Rent | 14 | 9 | 3 | 4 | | | | | |
| " Local Rates | 15 | 3 | 5 | 2 | | | | | |
| " Insurance | 16 | 1 | 3 | 6 | | | | | |
| " Gas | 17 | 3 | 2 | 0 | | | | | |
| " Electric Light | 18 | 1 | 17 | 9 | | | | | |
| " Water | 19 | 0 | 15 | 0 | | | | | |
| " Coals | 20 | 4 | 16 | 0 | | | | | |
| " Bags, Books, Paper, and Stationery ... | 21 | 7 | 4 | 4 | | | | | |
| " Horse and Delivery Expenses | 22 | 11 | 10 | 10 | | | | | |
| " Advertising | 23 | 3 | 5 | 0 | | | | | |
| " Trade Expenses | 24 | 22 | 4 | 3 | | | | | |
| " Maintenance of— | | | | | | | | | |
| Horse Stock | 4 | 0 | 10 | 0 | | | | | |
| Vans, Carts, &c., Stock | 5 | 2 | 5 | 0 | | | | | |
| Shop Fixtures, Fittings, and Sundries | 6 | 2 | 17 | 4 | | | | | |
| Bakehouse Tools and Ovens | 7 | 3 | 12 | 3 | | | | | |
| Hire Stock. | 8 | 0 | 9 | 1 | | | | | |
| " Balance being Net Profit | 1 | 46 | 12 | 5 | | | | | |
| | | 194 | 18 | 11 | | | 194 | 18 | 11 |

Many bakers and confectioners find it inconvenient to take stock any other day in the week than Saturday. In order to overcome this difficulty they make their quarter, half-year, or year an exact number of weeks. Thus, if a baker made his opening balance sheet on Saturday, June 26, 1909, his quarter would end on Saturday, September 25, 1909, or his half-year on Saturday, December 25, 1909. In the Cash Book and Analysis Book his months would be from June 26 to July 25, from July 26 to August 25, from August 26 to September 25, &c.

It is also often difficult to revalue the bakehouse tools, hire stock, horse stock, vans, carts, and harness stock, &c., every quarter. Many bakers prefer to leave the consideration of the maintenance of these stocks to the end of their financial year, the amounts for the year being then deducted from the four quarterly or two half-yearly net profits—which have been obtained in the manner shown above—and the residual net profit for the year carried to capital account.

It may sometimes be the case that a baker and confectioner is asked to accept bills payable at future dates in payment of goods received. **Bills Payable** If he does so, a bills payable account should be opened and **Receivable** in the Private Ledger, and the amount of the bill credited to this account and debited to the Ledger account of the firm who had

BALANCE SHEET, 31ST JULY, 1909

| Dr. | CAPITAL AND LIABILITIES | | ASSETS | | | | Cr. |
|---|-------------------------|----|--------|----|----|---|------|
| | | | £ | s. | d. | £ | |
| To Capital | P.L. | 1 | 754 | 10 | 7 | By Cash at Bank | C.B. |
| " C. Honk Loan A/c..... | 3 | 3 | 300 | 0 | 7 | " Cash in hand..... | 1 |
| " Interest accrued on same—less Tax | " | " | 1 | 8 | 0 | " Cash—Till Money..... | 2 |
| " Trade and General Creditors— | L. | 1 | | | 6 | " Cash—Petty Cash for Expenses..... | " |
| Jackson & Co..... £21 9 11 | 1 | 1 | | | | " Book Debts..... | P.L. |
| Pershaw, Smith, & Co. 12 16 8 | 2 | 2 | | | | " Flour Stock..... | 26 |
| Pit Flour Co., Ltd.... 36 0 0 | 3 | 3 | | | | " General Purchases Stock..... | 10 |
| Ripper & Kye, Ltd. ... 54 10 0 | 4 | 4 | | | | " Bags, Books, Paper, and Stationery Stock..... | 11 |
| Sewell & Snap..... 25 18 5 | 5 | 5 | | | | " Coals Stock | 21 |
| R. Jones (Rent)..... 9 3 4 | P.L. | 14 | | | | " Horse Stock | 20 |
| Gas Co..... 3 2 0 | 17 | 17 | | | | " Forage Stock | 4 |
| Electric Light Co. ... 6 19 1 | 18 | 18 | | | | " Vans, Carts, and Harness Stock..... | 22 |
| Local Rates | 15 | 15 | | | | " Shop Fixtures, Fittings, and Sundries | 5 |
| Water..... 3 0 0 | 19 | 19 | 176 | 4 | 7 | " Bakehouse Tools and Utensils in Trade..... | 6 |
| | | | | | | " Hire Stock | 7 |
| | | | | | | " Goodwill..... | 8 |
| | | | | | | | 9 |
| | | | 1232 | 3 | 8 | | |
| | | | | | | 1232 | 3 |
| | | | | | | | 8 |

supplied the goods. The date on which the bill is due should be noted in the bills payable account, and when it is met, the cash in payment should be posted to this account from the Cash Book, thus:—

| Dr. | | BILLS PAYABLE ACCOUNT | | | | | | | | | | Cr. | |
|---------|--------------|-----------------------|----|----|----|---------|---|--------|----|----|----|-----|--|
| 1909. | | C.B. | £ | s. | d. | 1909. | | | £ | s. | d. | | |
| Nov. 17 | To Cash..... | 5 | 56 | 8 | 5 | Aug. 14 | By Limpton & Son (due Nov. 17, 1909)..... | L. 140 | 56 | 8 | 5 | | |
| | | | | | | | | | | | | | |

| Dr. | | LIMPTON & SON, 93 KING STREET, HENMOOR | | | | | | | | | | Cr. | |
|---------|--|--|----|----|----|--------------------|----------------------------|---------|----------|--------|--------|-----|--|
| 1909. | | | £ | s. | d. | 1909. | | J. | £ | s. | d. | | |
| Aug. 14 | To Bill Payable (due Nov. 17, 1909)..... | P.L. 64 | 56 | 8 | 5 | June 26 July 14 | By Goods..... " " | 9 15 | 24 32 | 6 2 | 3 2 | | |
| | | | 56 | 8 | 5 | | | | 56 | 8 | 5 | | |
| | | | | | | | | | | | | | |

In the event of a bill receivable being drawn by the baker and confectioner and accepted by a customer in payment of bread, smalls, &c., supplied, a bills receivable account should be opened. The amount of the bill should be debited to this account, and entered as takings in the gross profit and loss account. When the bill is met, the cash received should be posted to the bills receivable account from the cash summary.

It will at once be obvious to the reader that, where the business consists of several shops, each will need its own Takings Book and Accounts Relating Expenses Book. If only the profit and loss account of to Branch Shops. the business as a whole is needed, all the extra accounts required will be (1) a page in the Analysis Book, and (2) a debit page in the Cash Book for each month for each shop. For making the entries in these books it will generally be found convenient for each shop to forward to the office a slip of paper showing (1) a list of the expenses for the previous day, and (2) the amounts of the customers' accounts paid, carmen's takings, shop takings, and amount banked. The former will be entered in the Analysis Book and the latter in the Cash Book. If the cash is collected from each shop and banked in one account, before banking the amounts should be agreed with the figures supplied. The invoices should be checked by the manager, initialed, and forwarded to the office to be entered in the Journal in the ordinary manner.

Where it is desired to know the profit or loss made by each shop, some further detail will be necessary. In the first place it will be absolutely essential for a complete record to be made of the goods transferred from one shop to another. The value assigned should represent the current wholesale price, and should allow of a profit to each shop.

It will also be necessary to mark each invoice in the Journal (or Day Book), showing to which shop the goods were delivered, and at the end of the quarter, half-year, or year, a separate analysis will have to be made out for each shop. An alternative method is to keep a separate Journal (or Day Book) for each. A separate system of impersonal accounts will have to be kept for each shop in the Private Ledger, and every cheque drawn, not in payment of a Ledger account, must have written against it in the Cash Book the address or other distinguishing mark of the shop on account of which the payment was made. In posting from the Analysis Book, Cash Book, or Journal, great care must be taken to charge the amounts to the right shop. With regard to the transfers spoken of above, let it be supposed that of two shops, A and B, A receives goods valued £32 from B in July, 1909, and that in the same period B receives goods valued £57 from A. At the end of the month B's general purchases account will be debited with the £57, while A's gross profit and loss account will have this amount added to the takings, and vice versa.

Above it has been understood that only *one* banking account was kept. If a separate banking account is kept for each shop, it will be more simple to have a Cash Book and an Analysis Book for each shop.

PRIVATE ESTATE ACCOUNTS

The system of bookkeeping which has been shown can include, if desired, that of a baker's private estate. In the description of the quarterly cash summary account reference has been made to the receipts and payments in respect of the private estate. These, if it is wished to have *no* private accounts whatever, must be entered direct to the capital account. If, however, this is done, the capital account will not show what has been received during a certain period for private revenue in the same way that the business profit has been found; nor, again, can the investor know which of his private assets has resulted in procuring the best return on his capital.

If, on the other hand, accounts are desired for the private estate, they may be opened in the following manner. Let it be supposed that on the 1st of July the baker possessed the following property:—

| | |
|--|-------|
| Freehold premises, 9 Coleman Street, S.E., which cost | £1000 |
| Leasehold premises, 62 Hart Street, Hamley, which cost | 800 |
| Ordinary shares in Robinson, Ltd. | 50 |
| Household furniture | 300 |
| Amount paid for life insurance | 100 |

Also, that an advance of £500 had been obtained on security of the freehold premises of 9 Coleman Street, S.E., from the London Assurance Company, at 6 per cent, interest payable quarterly. Further, that the leasehold premises and ordinary shares have been fully paid, and that

nothing is due on the household furniture or life insurance. In connection with the leasehold premises, 62 Hart Street, Hamley, let it be supposed that the ground rent of £10 per annum is due for the previous half-year (£5). From these particulars the balance sheet on 1st July, 1909, for the private estate would be drawn up as follows, and should be entered on a page in the Private Ledger:—

BALANCE SHEET, 1ST JULY, 1909
(Private Estate only)

| CAPITAL AND LIABILITIES | | | | | ASSETS | | | | |
|--|------|------|----|----|---|------|------|----|----|
| | P.L. | £ | s. | d. | | P.L. | £ | s. | d. |
| To Capital..... | 1 | 1745 | 0 | 0 | By Freehold Premises of 9 Coleman St., S.E., at Cost..... | 205 | 1000 | 0 | 0 |
| " Mortgage (on security of 9 Coleman St., S.E.) to London Assurance Co. | 210 | 500 | 0 | 0 | " Leasehold Premises of 62 Hart St., Hamley, at Cost.. | 215 | 800 | 0 | 0 |
| " Creditor for Ground Rent (62 Hart St., Hamley)..... | 217 | 5 | 0 | 0 | " Ordinary Shares—Robinson, Ltd..... | 220 | 50 | 0 | 0 |
| | | | | | " Household Furniture..... | 224 | 300 | 0 | 0 |
| | | | | | " Life Insurance Policy — Amount paid thereon..... | 226 | 100 | 0 | 0 |
| | | 2250 | 0 | 0 | | | 2250 | 0 | 0 |

Accounts for all the above assets and the mortgage should now be opened in the Private Ledger, and would appear as follows:—

205

Dr. No. 9 COLEMAN STREET, S.E.—FREEHOLD PREMISES CAPITAL ACCOUNT Cr.

| | | | | | |
|-----------------|-------------------------|-------------|-----------|---------|---------|
| 1909. July 1 | To Balance of Cost..... | P.L. 201 | £ 1000 | s. 0 | d. 0 |
|-----------------|-------------------------|-------------|-----------|---------|---------|

210

Dr. LONDON ASSURANCE CO.—MORTGAGE ACCOUNT ON SECURITY OF 9 COLEMAN STREET, S.E. Cr.

| | | | | | |
|-----------------|------------------|-------------|----------|---------|---------|
| 1909. July 1 | By Amount due... | P.L. 201 | £ 500 | s. 0 | d. 0 |
|-----------------|------------------|-------------|----------|---------|---------|

215

Dr. No. 62 HART STREET, HAMLEY.—LEASEHOLD PREMISES CAPITAL ACCOUNT Cr.

| | | | | | |
|-----------------|-------------------------|-------------|----------|---------|---------|
| 1909. July 1 | To Balance of Cost..... | P.L. 201 | £ 800 | s. 0 | d. 0 |
|-----------------|-------------------------|-------------|----------|---------|---------|

| | | | | | | | | | | | |
|--------|--------------|---|----|----|----|--|--|--|--|-----|--|
| 220 | | | | | | | | | | | |
| Dr. | | ORDINARY SHARES IN ROBINSON, LTD.—CAPITAL ACCOUNT | | | | | | | | Cr. | |
| 1909. | | P.L. | £ | s. | d. | | | | | | |
| July 1 | To Cost..... | 201 | 50 | 0 | 0 | | | | | | |

| | | | | | | | | | | | |
|--------|---------------------------|----------|-------------------------------------|----|----|--|--|--|-----|--|--|
| 225 | | | | | | | | | | | |
| Dr. | | | HOUSEHOLD FURNITURE—CAPITAL ACCOUNT | | | | | | Cr. | | |
| <hr/> | | | | | | | | | | | |
| 1909. | | | £ | s. | d. | | | | | | |
| July 1 | To Valuation or Cost..... | P.L. 201 | 300 | 0 | 0 | | | | | | |
| <hr/> | | | | | | | | | | | |

| | | | | | | | | | | | |
|--------|----------------|-----|--------------------------------|---|----|----|--|--|-----|--|--|
| 230 | | | | | | | | | | | |
| Dr. | | | LIFE INSURANCE—CAPITAL ACCOUNT | | | | | | Cr. | | |
| 1909. | | | P.L. | £ | s. | d. | | | | | |
| July 1 | To Amount paid | 201 | 100 | 0 | 0 | | | | | | |

The balance of capital must be transferred to the same capital account as used in the business. At the commencement this would appear thus:—

| Dr. | | | | | | CAPITAL ACCOUNT | | | | Cr. | | |
|-----|--|--|--|--|--|-----------------|------------------|------|------|-----|----|----|
| | | | | | | 1909. | | | | £ | s. | d. |
| | | | | | | July 1 | By Business | P.L. | | | | |
| | | | | | | | Capital | 195 | 725 | 5 | 0 | |
| | | | | | | " " | " Private Estate | | | | | |
| | | | | | | | Capital | 201 | 1745 | 0 | 0 | |
| | | | | | | | | | 2470 | 5 | 0 | |

As each of the three investments noted will produce an income of its own, a revenue account must be opened for each. The following accounts show not only the starting, but also how they may look after a period of six months, and how they are balanced when it is desired to close the accounts.

| 207 | | | | | | | | | | | | | |
|---------|------------------|------|--|----|----|---------|--------------------|------|-----|------|----|----|----|
| Dr. | | | No. 9 COLEMAN STREET, S.E.—REVENUE ACCOUNT | | | | | | | Cr. | | | |
| 1909. | | | C.B. | £ | s. | d. | 1909. | | | C.B. | £ | s. | d. |
| Nov. 2 | To Repairs..... | 6 | 2 | 19 | 6 | Aug. 4 | By Rent—less Tax.. | 2 | 28 | 10 | 0 | | |
| Dec. 12 | " " | 7 | 12 | 3 | 6 | " " | " Income Tax de- | P.L. | 234 | 1 | 10 | 0 | |
| " 31 | " Private Estate | P.L. | | | | | deducted..... | C.B. | 4 | 28 | 10 | 0 | |
| | Revenue A/c... | 240 | 44 | 17 | 0 | Oct. 21 | " Rent—less Tax.. | P.L. | 234 | 1 | 10 | 0 | |
| | | | | | | " " | " Income Tax de- | | | 60 | 0 | 0 | |
| | | | | | | | deducted..... | | | | | | |
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Dr.

No. 62 HART STREET, HAMLEY—REVENUE ACCOUNT

Cr.

| 1909. | | | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
|---------|---------------------------------|----------|----|----|----|---------|-----------------------------|------|----|----|----|
| Aug. 19 | To Cash for Ground Rent..... | C.B. 2 | 4 | 15 | 0 | July 1 | By Ground Rent due | 201 | 5 | 0 | 0 |
| " " | " Income Tax deducted..... | P.L. 232 | 0 | 5 | 0 | " 10 | " Rent received... | 4 | 16 | 12 | 6 |
| Nov. 12 | " Repairs | C.B. 6 | 10 | 7 | 3 | " " | " Income Tax deducted | 234 | 0 | 17 | 6 |
| Dec. 31 | " Private Estate Revenue A/c... | P.L. 240 | 19 | 12 | 9 | Oct. 7 | " Rent received... | 8 | 16 | 12 | 6 |
| " " | " Ground Rent due | c/d | 5 | 0 | 0 | " " | " Income Tax deducted | 234 | 0 | 17 | 6 |
| | | | 40 | 0 | 0 | | | | 40 | 0 | 0 |
| | | | | | | Dec. 31 | " Ground Rent due | b/d | 5 | 0 | 0 |

222

Dr.

ORDINARY SHARES IN ROBINSON, LTD.—REVENUE ACCOUNT

Cr.

| 1909. | | | £ | s. | d. | 1909. | | C.B. | £ | s. | d. |
|---------|------------------------------------|----------|---|----|---------|----------------------------|------------------|------|---|----|----|
| Dec. 31 | To Private Estate Revenue A/c..... | P.L. 240 | 3 | 0 | 0 | July 16 | By Dividend..... | 4 | 1 | 8 | 6 |
| | | | | | " " | " Income Tax deducted..... | P.L. 234 | 0 | 1 | 6 | |
| | | | | | Oct. 20 | " Dividend..... | C.B. 8 | 1 | 8 | 6 | |
| | | | | | " " | " Income Tax deducted..... | P.L. 234 | 0 | 1 | 6 | |
| | | | 3 | 0 | 0 | | | | 3 | 0 | 0 |

A perusal of the above shows (1) that the ground rent due in the opening balance sheet must be posted to the credit of the corresponding revenue account; (2) that where income tax is deducted from rent, &c., received or paid, the amount of the same should be entered under the cash; (3) that when repairs are paid for, the cash or cheque in payment of the same must be posted to the revenue account of the property on which the repairs were executed, just as if it were in payment of an ordinary Ledger account; (4) that at the end of the half-year or other period the excess of the credits over the debits is transferred to the private estate revenue account; in the case of the leasehold premises the ground rent due is inserted and brought down.

Two more accounts must now be entered; these are:—

1. Interest account.
2. Property and income-tax account.

In the interest account is debited the interest paid to the London Assurance Company, together with the income tax deducted from the same. At the end of the six months or other period the total is transferred to the private estate revenue account.

In the property and income-tax account are debited the tax deducted from the rents, &c., *received*, and the tax deducted from the interest and ground rent *paid* is credited. Its balance at the end of the half-year is carried to the private estate revenue account.

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| Dr. | | | | INTEREST ACCOUNT | | | | Cr. | | | |
|---------|---------------------------------|----------|----|------------------|----|---------|------------------------------------|------|----|----|----|
| 1909. | | C.B. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| July 23 | To Cash to London Assurance Co. | | 7 | 2 | 6 | Dec. 31 | By Private Estate Revenue A/c..... | 240 | 15 | 0 | 0 |
| " " | " Income Tax deducted..... | P.L. 234 | 0 | 7 | 6 | | | | | | |
| Oct. 26 | " Cash to London Assurance Co. | C.B. 5 | 7 | 2 | 6 | | | | | | |
| " " | " Income Tax deducted..... | P.L. 234 | 0 | 7 | 6 | | | | | | |
| | | | 15 | 0 | 0 | | | | 15 | 0 | 0 |

234

| Dr. | | | | PROPERTY AND INCOME-TAX ACCOUNT | | | | Cr. | | | |
|---------|---|------|---|---------------------------------|----|---------|--|------|---|----|----|
| 1909. | | P.L. | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| Dec. 31 | To 9 Coleman St. Revenue A/c... | 207 | 3 | 0 | 0 | Dec. 31 | By 62 Hart St., Hamley (deducted from Ground Rent) | 217 | 0 | 5 | 0 |
| " " | " 62 Hart St., Hamley, Revenue A/c..... | 217 | 1 | 15 | 0 | " " | " London Assurance Co..... | 232 | 0 | 15 | 0 |
| " " | " Robinson, Ltd., Revenue A/c... | 222 | 0 | 3 | 0 | " " | " Private Estate Revenue A/c. | 240 | 3 | 18 | 0 |
| | | | 4 | 18 | 0 | | | | 4 | 18 | 0 |

The account to which attention must now be turned is the private estate revenue account. From the references made to this account its purpose may have been anticipated. It takes the same place and serves the same purpose in the private estate accounts that the net profit and loss account does in the business accounts. In it are debited the balances of what may be termed the expense accounts. These in the sample accounts being shown will be (1) the balance of the interest account, and (2) that of the property and income-tax account. On the credit side of this account are placed the balances of the revenue accounts. If a property has been unlet, and repairs have been done, the balance of its revenue account will fall on the credit side, and hence will be posted to the debit or expense side of the private estate revenue account.

The excess of the total of the credit side of the private estate revenue account over that of the debit will give the net profit derived from the private estate during the six months or other period. If, perchance, the

reverse is the case, a net loss will have been made. This balance of profit or loss must be entered and the account closed. Furthermore, the net profit must be carried to the credit of the capital account, or, if net loss, to the debit.

The sample accounts already given will furnish the following private estate revenue account:—

| PRIVATE ESTATE REVENUE ACCOUNT FROM 1ST JULY, 1909, TO 31ST DECEMBER, 1909 | | | | | | | | | | | |
|---|-------------|--|----|----|----|---|-------------|--|----|----|----|
| Dr. | | | | | | Cr. | | | | | |
| | | | £ | s. | d. | | | | £ | s. | d. |
| To Interest on Mortgage..... | P.L. 232 | | 15 | 0 | 0 | By No. 9 Coleman St., S.E., Revenue A/c. | P.L. 207 | | 44 | 17 | 0 |
| " Income Tax | 234 | | 3 | 18 | 0 | " No. 62 Hart St., Hamley, Revenue A/c. | 217 | | 19 | 12 | 9 |
| " Balance being Net Profit carried to Capital A/c. ... | 1 | | 48 | 11 | 9 | " Dividend on Shares in Robinson, Ltd. | 222 | | 3 | 0 | 0 |
| | | | 67 | 9 | 9 | | | | 67 | 9 | 9 |

If during the period some of the mortgage is paid off, the cash in payment of the same must be debited direct to the mortgage account, and at the end of the period the balance is brought down, thus:—

| LONDON ASSURANCE CO.—MORTGAGE ACCOUNT ON SECURITY OF No. 9 COLEMAN STREET, S.E. | | | | | | | | | | | |
|--|-----------|--|-----|----|----|----------------------------------|-------------|--|-----|----|----|
| Dr. | | | | | | Cr. | | | | | |
| | | | £ | s. | d. | | | | £ | s. | d. |
| 1909. Dec. 24 To Cash..... | C.B. 7 | | 50 | 0 | 0 | 1909, July 1 By Amount due... | P.L. 201 | | 500 | 0 | 0 |
| " 31 " Balance..... | c/d | | 450 | 0 | 0 | | | | 500 | 0 | 0 |
| | | | 500 | 0 | 0 | | | | | | |
| | | | | | | Dec. 31 " Balance..... | b/d | | 450 | 0 | 0 |

If, again, some fresh capital has been invested (say) in the purchase of freehold land at Tilsberry, an account must be opened for this. Also, if it is to be paid for in instalments, an account must be opened for the person from whom the land is bought, thus:—

| 236 FREEHOLD LAND, TIMBER STREET, TILSBERRY—CAPITAL ACCOUNT | | | | | | | | | | | |
|--|-------------|--|-----|----|----|-----|--|--|--|--|--|
| Dr. | | | | | | Cr. | | | | | |
| | | | £ | s. | d. | | | | | | |
| 1909. Sept. 25 To Cost of Purchase..... | P.L. 238 | | 250 | 0 | 0 | | | | | | |

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| Dr. | | | E. K. JONES, ESQ. | | | | | | Cr. | | |
|----------|--------------------|-----|-------------------|----|----|----------|------------------|------|-----|----|----|
| 1909. | | C.B | £ | s. | d. | 1909. | | | £ | s. | d. |
| Sept. 25 | To Deposit Paid... | 3 | 75 | 0 | 0 | Sept. 25 | By Freehold Land | P.L. | | | |
| Oct. 29 | " Cash..... | 5 | 12 | 10 | 0 | | bought | 236 | 250 | 0 | 0 |
| Nov. 29 | " " | 6 | 12 | 10 | 0 | | | | | | |
| Dec. 27 | " " | 7 | 25 | 0 | 0 | | | | | | |
| " 31 | " Balance..... | c/d | 125 | 0 | 0 | | | | | | |
| | | | 250 | 0 | 0 | | | | 250 | 0 | 0 |
| | | | | | | Dec. 31 | " Balance..... | b/d | 125 | 0 | 0 |

At the end of the six months or other period the accounts are closed and the balance sheet made out. It is necessary to state that the private estate accounts must be closed at the same time as those of the business. It is not essential that the books should be balanced every half-year; yet experience has shown that this is the most desirable period. Following out the sample accounts, the balance sheet for the private estate would stand on the 31st December, 1909, thus:—

BALANCE SHEET, 31ST DECEMBER, 1909
(Private Estate only)

| Dr. | | CAPITAL AND LIABILITIES | | | | ASSETS | | Cr. | | | |
|--------------------|-----|-------------------------|---|----|----|-------------------|------|------|---|----|----|
| | | P.L. | £ | s. | d. | | | | £ | s. | d. |
| To Capital | 1 | 1920 | 0 | 0 | | By Freehold Pre- | | | | | |
| " Mortgage (on se- | | | | | | mises of 9 Cole- | | | | | |
| curity of 9 Cole- | | | | | | man St., S.E., | P.L. | | | | |
| man St., S.E.) | | | | | | at Cost..... | 205 | 1000 | 0 | 0 | |
| to London As- | | | | | | " Leasehold Pre- | | | | | |
| surance Co..... | 210 | 450 | 0 | 0 | | mises of 62 Hart | | | | | |
| " E. K. Jones for | | | | | | St., Hamley, at | | | | | |
| Balance of Pur- | | | | | | Cost..... | 215 | 800 | 0 | 0 | |
| chase Money | | | | | | " Freehold Land | | | | | |
| on Freehold | | | | | | Timber St., | | | | | |
| Land | 238 | 125 | 0 | 0 | | Tilsberry, at | | | | | |
| " Creditor for | | | | | | Cost..... | 236 | 250 | 0 | 0 | |
| Ground Rent.. | 217 | 5 | 0 | 0 | | " Ordinary Shares | | | | | |
| | | | | | | in Robinson, | | | | | |
| | | | | | | Ltd. | 220 | 50 | 0 | 0 | |
| | | | | | | " Household Fur- | | | | | |
| | | | | | | niture..... | 224 | 300 | 0 | 0 | |
| | | | | | | " Life Insurance | | | | | |
| | | | | | | Policy, amount | | | | | |
| | | | | | | paid thereon .. | 226 | 100 | 0 | 0 | |
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A few words in closing may be said about the joint capital account. In balancing the business and private estate accounts the sum of the capitals obtained from the balance sheets should be identical with the balance of the capital account. The following speaks for itself.

| Dr. | | | CAPITAL ACCOUNT | | | | | | Cr. | | |
|---------|--------------------------------------|---------|-----------------|----|----|---------|---|----------|------|----|----|
| 1909. | | | £ | s. | d. | 1909. | | P.L. | £ | s. | d. |
| Dec. 31 | To Private Drawings A/c..... | P.L. 12 | 50 | 0 | 0 | July 1 | By Business Capital | 195 | 725 | 5 | 0 |
| " " | " Interest on Business Loan | 100 | 17 | 11 | 0 | " " | " Private Estate Capital..... | 201 | 1745 | 0 | 0 |
| " " | " Household and Living Expenses..... | 20 | 38 | 8 | 6 | Dec. 31 | " Net Profit of Business for Half-year..... | 153 | 110 | 14 | 6 |
| " " | " Balance of Capital | c/d | 2523 | 11 | 9 | " " | " Net Profit of Private Estate for Half-year... | 240 | 48 | 11 | 9 |
| | | | 2629 | 11 | 3 | | | | 2629 | 11 | 3 |
| | | | | | | | By Balance, viz.:— | | | | |
| | | | | | | | Business Capital £603 11 9 | P.L. 196 | | | |
| | | | | | | | Private Estate Capital 1920 0 0 | 202 | | | |
| | | | | | | | | b/d | 2523 | 11 | 9 |

CHAPTER LXII

THE OFFICE

In no department of a works is it more necessary to have a properly organized system than in the office, as this is the centre from which all the **System in** other departments are directed, and should it be defective, the **the Office.** efficiency of the departments depending upon it will be greatly impaired. Not only has the conduct of the departments inside the works to be controlled by the office, but also the commercial section, relating to all extraneous negotiations. It is necessary in the conduct of any business to record in writing all transactions that take place, and arrangements must be made to enable the documents of various kinds to be dealt with promptly, applied to their particular purpose, and stored in such a manner as to facilitate easy reference. To effect this purpose economically, up-to-date offices are provided with systems of books and files in addition to the usual furniture. Of late years filing cabinets and card systems have been introduced, and are now considered indispensable. Besides these it is necessary to provide machines for writing, copying, and calculating, which are too well known to require description.

Filing cabinets, of which there are several designs, are arranged to file documents, such as correspondence, invoices, orders, &c., in such a manner as to be easy of reference. The systems most generally **Filing Cabinets.** adopted are what are known as *flat* and *vertical* filing, the former being considered preferable where the majority of the documents to be filed consist of single papers, and the latter where many

documents referring one to another are filed together. The cabinets usually comprise one or more files or drawers, as the case may be, each file being subdivided either alphabetically, numerically, or to meet specific requirements. Cabinet

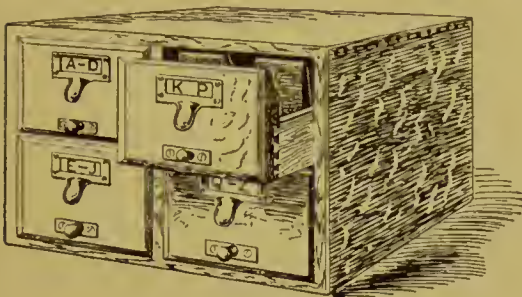


Fig. 256.—Card Index Cabinet

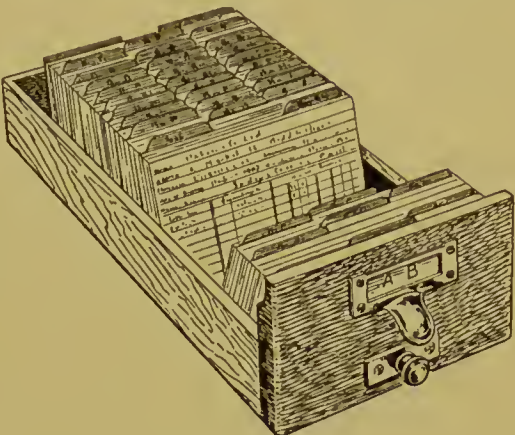


Fig. 257.—Drawer of Card Index Cabinet

filing systems are of the greatest use in filing correspondence, invoices, and other documents which may be required for reference, and can be easily adapted to meet special requirements.

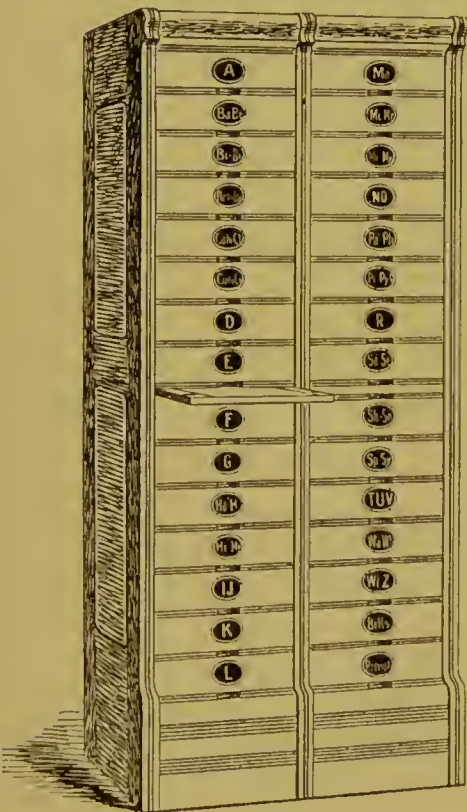


Fig. 258.—Flat Filing Cabinet

The card index file (fig. 256) consists of a cabinet containing one or more drawers (fig. 257), each of which is furnished with a number of cards, specially ruled for the purpose for which they are to be utilized. Guide cards alphabetically or numerically labelled are placed between the other cards to facilitate the location and withdrawal of any particular card. The card system has been mentioned as being specially suitable for keeping the prime costs of material, labour, and stock.

In the flat filing system (fig. 258)

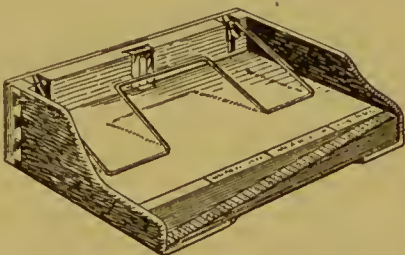


Fig. 259.—Drawer of Flat Filing Cabinet

the number of files (fig. 259) required in the cabinet will depend upon the number of documents to be dealt with daily, and

Flat Filing System.

should be about thirty where sixty papers per diem have to be filed. The number of files apportioned to each particular series of documents, which may be either the series of correspondence, invoices, orders, or petty cash receipts, &c., must be proportionate to the number of each of these papers received daily.

A single file (fig. 259) consists of a tray fitted with a removable thumb index, which is generally alphabetically arranged either in the simple alphabet or in combinations of letters, and can be obtained, prepared from most careful investigation by the makers, to meet practically any requirements. The documents to be filed are placed between the leaves of the index, without fixing in any way, the first letter or combination of letters of the name of the firm from whom the document was received corresponding with the letter or letters of the index. If two or more files are necessary to contain the documents, the index would be amplified and run through the series, commencing at the letter A in the first file, and finishing at the letter Z in the last. The contents of each file and the section of the index should be legibly recorded on the front of each file.

The vertical filing cabinet (fig. 260) contains one or more drawers of sufficient width and depth to take the



Fig. 260.—Vertical Filing Cabinet

documents required to be filed without folding. For the purpose of general business correspondence, invoices, orders, &c., drawers taking foolscap papers are suitable. In the cabinets of standard size, sufficient space is provided in each drawer for filing about 5000 papers. Each drawer is provided with folders or covers, in which the documents are placed, each correspondent being allotted a number upon the first transaction, and all future correspondence being conducted under this reference number. A folder under the same number would be allotted in the drawer to the correspondent, and in this folder all his documents would be placed.

In a case where an undertaking is being carried out in which much correspondence is likely to arise, possibly with various firms, and it is desirable to bring it all together, this particular work would be allotted a number and folder, and all correspondence in connection with that work would be conducted under that number and consequently filed in the one folder. It is sometimes convenient to subdivide the correspondence in connection with a job into sections, either to particular firms or to parts of the work, so that the whole of the correspondence relating to a particular part or firm is available for immediate reference. This is provided for by

having several folders under the one number; each folder, in addition to bearing the general reference number, would bear the name of the firm or section of the work, as the case may be.

It is necessary to provide an alphabetical index to the folders, arranged under the card system (fig. 256), to facilitate reference to the number under which the documents relating to the firm or work are filed. In some instances it may be more suitable to the requirements to utilize the alphabetical in preference to the numerical index upon the folders.

It will be found advantageous to attach the carbon or press copies of replies to correspondence, and file them with the letters or subject matters to which they refer, so that a consecutive record of the transaction is contained in one folder. Telephone messages should be written on special slips with the date and hour of receipt inserted, and should be filed with the correspondence, and all telegrams received and carbon copies of all telegrams sent, should also be filed.

CHAPTER LXIII

WHEAT CONSUMPTION IN BRITAIN

The population of the United Kingdom was returned at the census of 1901 at 41,450,000. Taking the natural increase it is pretty safe to estimate the present population at from 44,000,000 to 44,500,000. Assuming a consumption of 6 bus. of wheat per head, we have an annual breadstuffs requirements of 33,000,000 to 33,750,000 qr. This estimate is fully confirmed by the present rate of our imports of wheat and of flour (reckoned at its equivalent in wheat). This large amount of breadstuffs has chiefly to be supplied by foreign countries, as our own production of wheat does not now average more than 6,500,000 qr., from which about 500,000 qr. must be deducted for seed wheat, while on an average of years the condition of a sensible proportion of the native wheat will preclude its use for human food, though happily it is not every crop of which over 25 per cent is rendered unfit for bread-making, as was the case in the rainy season of 1903. Before proceeding to consider the varied sources of our bread supply it may not be without interest to compare briefly the relative bread consumption of the United Kingdom with that of some other civilized countries.

Taking our neighbour France, with a population of somewhere about 40,000,000, we get a breadstuffs consumption of roughly 43,000,000 qr. per annum, as against 32,000,000 qr. to the 43,000,000 people in this country. The consumption of bread in Great Britain and in the United States is quite moderate as compared with the figures furnished by the two leading continental lands,

Consumption of
Breadstuffs in Ger-
many and France.

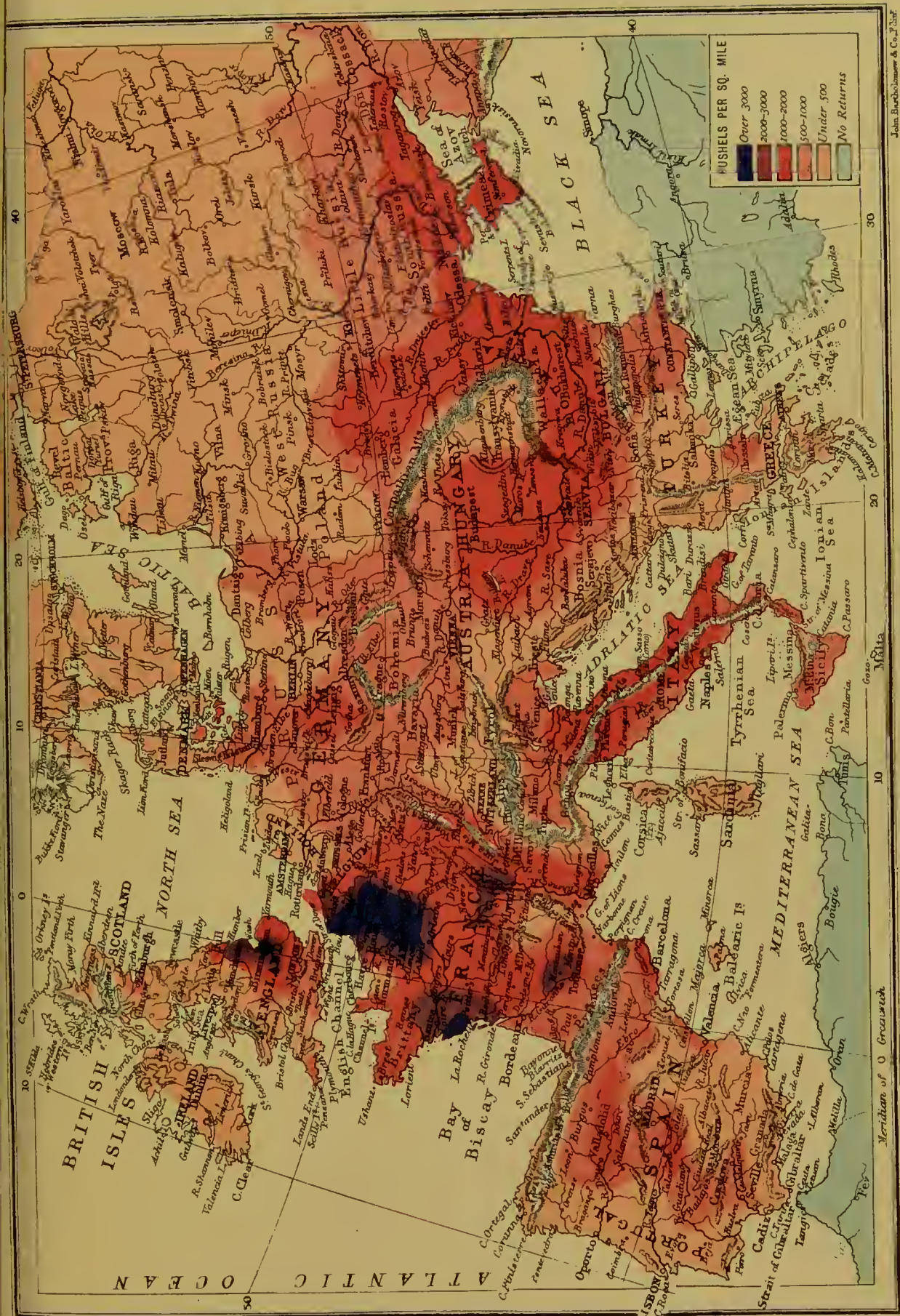
namely France and Germany. According to the Fiscal Enquiry Blue-Book the average consumption of wheat and rye (reckoned in grain) per head of the population in Germany and France is 525 and 550 lb., as compared with 356 and 290 lb. in the United Kingdom and United States respectively. The proportion of rye eaten in Great Britain is small, namely 6 lb. per head, while in the United States it amounts to 20 lb., in Germany to 325 lb., and in France to 77 lb. per head. It is evident, therefore, that the consumption of wheat alone stands at 350, 274, 200, and 473 lb. in the United Kingdom, United States, Germany, and France respectively. The amount of wheaten bread consumed in America may seem small, but it must be remembered that to a certain extent maize competes with bread as an article of diet in that country, in the form, for instance, of corn-mush—a kind of porridge. The German consumption of wheat is comparatively small, but the balance is made up by rye. It would not be safe, however, to conclude that the 325 lb. of rye assigned to each native of the Fatherland are entirely consumed in the form of bread, because rye is there used for several industrial purposes.

The wide difference between the bread consumption of this country and that of Germany and France is largely to be attributed to the higher standard of comfort enjoyed by the working classes of this land and of the United States. The more liberal wages enjoyed by British and American workers enable them to enjoy a comparatively generous diet. A table prepared a few years ago for the United States Commissioner of Labour showed that the average weekly expenditure of each family on meat, poultry, and fish in Great Britain, the United States, Germany, France, Switzerland, and Belgium worked out at 5s. 4d., 5s. 4½d., 1s. 11½d., 2s. 2¾d., 1s. 11d., and 2s. 0½d. respectively. These are speaking figures, and fully explain the relatively small use of bread in this country.

CHAPTER LXIV

THE SOURCES OF OUR FLOUR SUPPLY

The United Kingdom has been a large importer of flour for at least a quarter of a century. As a matter of fact British flour imports were important, relatively to the consumptive capacity of the population, at an even earlier date. Going back to 1830, in the era of high protection, the total imports of flour into the United Kingdom were returned in that year as equal to 224,096 sacks of 280 lb.; in 1840 the flour imports amounted to 621,080 sacks. The repeal of the corn laws took effect in February, 1849, and in the following year our flour imports reached 1,542,016 sacks. The registration duty substituted by Sir Robert Peel for the heavy protective duties amounted to 1s. per quarter on wheat and 4½d.



John Bartholomew & Co., Ltd.

THE CHIEF WHEAT-GROWING REGIONS I—EUROPE

Meridian of 0 Greenwich

per ewt. on flour, equal to $11\frac{1}{4}d.$ per sack of 280 lb. These duties were abolished in 1869. Through the fifties flour imports continued to increase, and in 1860 reached 2,055,696 sacks. At this point there was a lull in our flour imports, which lasted some years, and in 1870 they were actually less than in 1860 by 134,133 sacks. But from 1870 the flour imports of the United Kingdom began to grow rapidly. In that year the Growing Imports population amounted to some 31,500,000, while the total after 1870. supply of breadstuffs was about 19,500,000 qr. (reckoning imported flour as wheat). The flour imports of that year were returned at 1,921,563 sacks. Taking calendar in place of cereal years, in 1873 these imports reached 2,484,960 sacks, and in 1878 3,131,231 sacks. The following year showed the great advance of 1,160,069 sacks on its predecessor, the total entries for 1879 being 4,291,300 sacks. For the 1870-9 decade the yearly average was 2,545,918 sacks. In the eighties the invasion of foreign flour made rapid progress. By 1882 the 5,000,000 mark had been considerably exceeded, while 1887 brought the then record figure of 7,225,293 sacks. The annual average for the 1880-9 decade was 5,862,636 sacks. The nineties were marked by bigger flour imports than ever. In 1892 the returns gave 8,842,503 sacks, but this year was eclipsed by 1899 with 9,178,280 sacks, which remains a record for any calendar year, though it was approached by 1901 with 9,029,000 sacks. The annual average for 1890-9 reached 7,859,087 sacks.

In thirty years the flour imports of the United Kingdom had about quadrupled. The explanation of this remarkable increase is simple. Early in the seventies the American north-west had been discovered by millers. That is to say, the magnificent quality, from a Why British Flour Imports Increased. baker's point of view, of the hard spring wheat grown on the practically virgin soil of Minnesota and the Dakotas had become apparent, and the milling capital of Minneapolis had been founded. But as the mills grew in size there was a larger and larger surplus for which an outlet had to be found. This was secured in free-trading Great Britain. We shall presently show in figures how large has been the proportion of American flour imported into this country, but as an instance we may point to the cereal year from August 1, 1901, to July 31, 1902, which witnessed the record imports of 9,229,700 sacks of 280 lb. Of this enormous total not far from 8,000,000 sacks were of American origin. This was not all spring wheat flour from the north-western states of the Union; a small proportion came from the Pacific coast—flour more or less soft and white—while a more considerable percentage consisted of hard winter wheat flour from Kansas and other winter wheat states. But the fact remains that American millers have made their mark in this country chiefly by spring American Spring Wheat Flour. wheat flour. It has often been asserted, especially within the past few years, that American spring wheat flour has declined much in quality, as compared with the standard of the eighties and early nineties. This is a debatable point, on which we cannot enter for the moment, but it is obvious that the quality of all breeds of wheat is liable to vary from season

to season. In 1904, for instance, there was a partial failure of the spring wheat crop, owing to the appearance of red and black rust in the Red River Valley and other parts of the north-west. Not only was the yield of wheat diminished, but its quality was seriously impaired. That strength, which had made Minneapolis and other American spring wheat flours so sought after by British bakers, had almost vanished. Naturally American millers in spring-wheat districts found it difficult to keep up any export trade at all. Probably under those difficult conditions the best results were achieved

Canadian Wheat by one or two Minneapolis mills which took to grinding
Ground in Manitoba wheat in bond. That is to say, they imported
United States. Canadian spring wheat to mill the flour for export; on the
 offals, of course, duty had to be paid if disposed of at home. The Canadian
 side of the Red River Valley, though it did not altogether escape the scourge
 of rust, suffered less than the American. The tale of this disastrous season
 is told by the imports of American flour into the United Kingdom from
 September 1, 1904, to August 31, 1905, namely 1,570,668 sacks of 280 lb.,
 as compared with the same imports during the same period of 1903-4, which
 reached 5,149,556 sacks.

It is interesting to compare with these returns the flour imports during the calendar years 1903, 1904, and 1905, which amounted to 8,240,460, 5,889,157, and 4,781,905 sacks respectively. These figures include flour imports from all countries. The annual average for the six years 1900-5 works out at 7,585,967 sacks. In comparing the returns of flour imports for different years it is well to remember that prior to April 15, 1902, when Sir Michael Hicks Beach (afterwards Viscount St. Aldwyn) imposed the duty on corn and grain which his successor, Mr. Ritchie (afterwards Lord

Variation in Ritchie), remitted in the budget of the following year,
Method of many kinds of wheat offals, such as sharps and middlings,
Customs Returns. were included in the custom-house returns under the
 heading of wheatmeal and flour. These are now separately distinguished.
 It would be interesting to have a classified return of all the imported flour,
 but perhaps this is asking too much of the custom house. Though offals pure
Low-Grade Flour and simple are no longer enumerated as flour, there is no
in Imports. doubt that a certain proportion of our flour imports con-

sists of low-grade flours little better than offal. Such flours are imported from South Russia, Hungary, France, America, and elsewhere. They are used for making dog biscuits and for different kinds of animal food, but breadmaking flours they are not. It is difficult to say exactly what proportion of our flour imports consists of such low grades, but at times the proportion must be considerable. A custom-house official has estimated the percentage of non-breadmaking flours at 25, but this must be more or less conjectural.

A fair idea of the sources of our flour supply may be obtained by taking
Sources of the following three quinquennial periods of calendar years:
Flour Supplies. 1891-5, 1896-1900, 1901-5, and averaging per annum the
 imports in each period. The results may be tabulated as follows:—

| UNITED STATES | | | | FRANCE | | | |
|-----------------|-----|-----|------------------|-----------------|-----|-----|------------------|
| | | | Sacks of 280 lb. | | | | Sacks of 280 lb. |
| 1891-5 | ... | ... | 6,417,868 | 1891-5 | ... | ... | 139,655 |
| 1896-1900 | ... | ... | 6,696,565 | 1896-1900 | ... | ... | 430,864 |
| 1901-5 | ... | ... | 5,181,366 | 1901-5 | ... | ... | 357,514 |
| CANADA | | | | GERMANY | | | |
| 1891-5 | ... | ... | 577,705 | 1891-5 | ... | ... | 86,910 |
| 1896-1900 | ... | ... | 730,107 | 1896-1900 | ... | ... | 38,618 |
| 1901-5 | ... | ... | 765,183 | 1901-5 | ... | ... | 66,552 |
| AUSTRIA-HUNGARY | | | | OTHER COUNTRIES | | | |
| 1891-5 | ... | ... | 456,606 | 1891-5 | ... | ... | 77,666 |
| 1896-1900 | ... | ... | 476,928 | 1896-1900 | ... | ... | 120,701 |
| 1901-5 | ... | ... | 293,152 | 1901-5 | ... | ... | 231,218 |

It will be evident that with all set-backs due to the poor crop of 1904, &c., the United States retains the lead in the exports of flour to Great Britain, other countries being, so to speak, nowhere. **Growing Imports of Canadian Flour.** Canada is a bad second, but has made steady progress during the period covered. It is probable that our actual imports of flour milled in Canadian mills are larger than indicated by the above table. The customs returns identify all goods by the port of shipment, and though of late special blue books have been issued, which try to trace the land whence our imports were consigned, the data do not yet seem to be altogether certain. A sensible amount of Canadian flour must reach us from American Atlantic ports, and no doubt some American flour is shipped from Canadian ports. The bulk of the Canadian flour we get is from Manitoba. It is milled from a spring wheat practically identical with the raw material of the esteemed patents of Minneapolis and Duluth. As the area under wheat in the Canadian north-west extends we may expect even more liberal supplies of flour from the Dominion. In 1903 our receipts of flour from Canadian ports reached 1,055,046 sacks, which so far is a record. The returns for 1906 show no startling developments. The total imports of foreign flour for that year amount to 5,676,120 sacks, as against 4,781,905 and 5,889,149 sacks in 1905 and 1904 respectively. From the United States we received 3,923,948 sacks as compared with 2,174,167 and 3,301,040 sacks in 1905 and 1904 respectively. From Canadian ports our flour receipts were 724,200 sacks, an increase of 192,160 sacks as compared with the results of 1905, but a falling away of 94,106 sacks as against 1904. Taking the three years 1906-8 we find the total imports of foreign flour into the United Kingdom averaged only 5,394,336 sacks of 280 lb. per annum. From United States ports the average annual importation was 3,855,412 sacks, while from Canadian ports the average annual receipts of flour were 713,860 sacks. The balance of our flour imports from all other sources during that period averaged roughly 825,000 sacks per annum.

The decline in the popularity of Hungarian flour is only too patent. **Decline in Imports from Hungary.** Glasgow is probably the best market to-day for this kind of flour.

French flour finds a moderate sale in some British ports, but this trade could hardly expand much unless British farmers altogether gave up the culture of wheat. **French Flour.** French flour is a substitute for English country flour, with which it can compete when the price is favourable. It is noteworthy that some forty years ago our imports of French flour were relatively large, and in those days Spain, a country from **Spanish Flour Imported.** which for several years not a single sack has been imported, was a regular exporter here. The record year for imports of French flour was 1896 with 677,016 sacks. In 1897 642,968 sacks were imported. In 1898 the figures fell to 175,264 sacks, and continued on a moderate scale till 1904, when they reached 594,768 sacks. The revival in the nineties of the French flour trade with this country was largely due to the disguised bounty given to French port millers by drawback regulations. When the duty on imported wheat was raised in 1892 to 12s. 3d. per quarter of 480 lb., a drawback or rebate was granted to millers importing wheat to grind in bond. Originally a miller could import wheat, and by exporting 60 per cent of flour practically escape the duty, the 6d. he paid **Effects of Drawbacks on Exports.** on his offals being a nominal sum. This arrangement gave him, moreover, at least 10 per cent of more or less saleable flour duty free, because 70 and not 60 per cent is a fair yield of flour from wheat. But in 1896 the French government, acting under the pressure of the powerful agricultural group in the chambers—it must not be forgotten that nearly half the population of France is interested directly or indirectly in wheat-growing—began to limit in various directions the facilities granted to exporting millers, and it is a question whether the drawback as now regulated gives millers any bounty at all. But probably whenever France grows a more than usually abundant crop we may expect fair imports of French flour.

Though Germany has been a regular exporter of flour to this country **German Flour Imported.** for many years, the amount of our imports from that land has been insignificant. The total for the fifteen years included in the above table is only 960,507 sacks. In the three years 1906–8 our imports of German flour averaged 109,424 sacks per annum.

On the other hand, several lands have within the past few years given signs of desiring to cultivate a trade in flour with this country. Three of the **Australian Flour Imports.** Australian colonies, namely New South Wales, Victoria, and South Australia, have become more or less regular exporters of flour here. In 1901 we received 218,684 sacks from those three colonies. This was due to the good crop of 1900. The following year was below the mark, and our Australian flour imports fell to 12,170 sacks. In 1902 there was a crop failure, the result being that our imports dropped to 8 sacks of flour from New South Wales. But with the bountiful crops of 1903 and 1904 the flour trade revived, and in the calendar years 1904 and 1905 we

imported 310,116 and 393,520 sacks respectively of Australian flour. The future of this trade must depend to a great extent on the seasons in Australia, which are somewhat uncertain. Australian wheat is derived largely from the varieties common to this country. The flour milled from it has much in common with what is known as English country flour, but at times has more strength. This factor, of course, is largely dependent on the season. The same brands of Australian flour, from mills of the best repute, will show very different degrees of strength in different years. The yearly average of our Australian flour imports for 1901-5 was 186,899 sacks, and for 1906-8 120,266 sacks.

Effects of Drought
on Australian
Flour Imports.

Nature of Aus-
tralian Flour.

With these may be compared the average imports from Argentina, which amounted during the same period to 105,256 sacks. In 1904 and 1905 these imports reached 115,560 and 246,720 sacks respectively. In the three years 1906-8, however, the average annual imports from the Plate dropped to 41,494 sacks. Argentine flour has been known in our markets for several years. At first the imports consisted almost exclusively of low grades. Presently patents came along, and in recent years arrivals have assumed a certain importance. Up to now, however, the Argentine flour trade has proved somewhat disappointing. Buyers have complained of irregular quality in marks for which a good price had been paid; it is a curious fact that better value has often been got out of the lower than the higher grades of Argentines. Those who have handled La Plata flour allege a difficulty in gauging its baking colour from the Pekar test. This flour has often some degree of strength, but in this, as in other respects, is variable.

Argentine
Flour Imports.

Poor Quality of
Argentine Flour.

Belgium has sent us a fair amount of flour during the past few years. Her average for 1901-5 is 125,251 sacks. In 1904 and 1905 our imports of Belgian flour were 216,324 and 306,320 sacks respectively. It may be noted that in both those years Kansas flour was not too abundant in our markets, nor was the quality always beyond reproach. During the spring and summer of 1905 there was almost a famine of Kansas flour in our ports, but a substitute was found in certain Belgian brands. Belgium possesses many well-equipped mills, and admits wheat free, though she levies a duty about equal to 2s. per sack of 280 lb. on flour. In the three years 1906-8 Belgian flour imports only averaged 73,382 sacks per annum.

Belgian Flour.

Scarcity of
Kansas Flour.

Holland ships flour on a moderate scale to this country, the average for 1901-5 reaching 22,246 sacks. In 1905 our imports of Dutch flour amounted to 66,200 sacks, but the average for 1906-7 fell to 25,724 sacks.

Dutch Flour.

Another small exporter is Italy, which in 1904 and 1905 sent us 31,580 and 20,840 sacks respectively. The average for 1901-5 came to 12,510 sacks, but rose in 1906-7 to 74,682 sacks.

Italian Flour.

Within the past few years Russia has cultivated a trade in flour with the United Kingdom; the average for the 1901-5 period is 31,928 sacks.

Russian Flour. In 1904 and 1905 the exports here amounted to 51,496 and 44,746 sacks respectively. The bulk of our imports of Russian flour comes from Odessa, but small consignments are also received from the Baltic. Our receipts of Russian flour are of all grades, from downright offal to top patents. Some of the latter combine great strength with excellent colour. Recently attempts have been made to work up a trade in these brands in the metropolis, but hitherto little success has attended these efforts. Such London bakers as have tried these Russian patents, while admitting their fine quality, complain that they work slowly. Our average annual imports of Russian flour for 1906-7 only reached 8718 sacks.

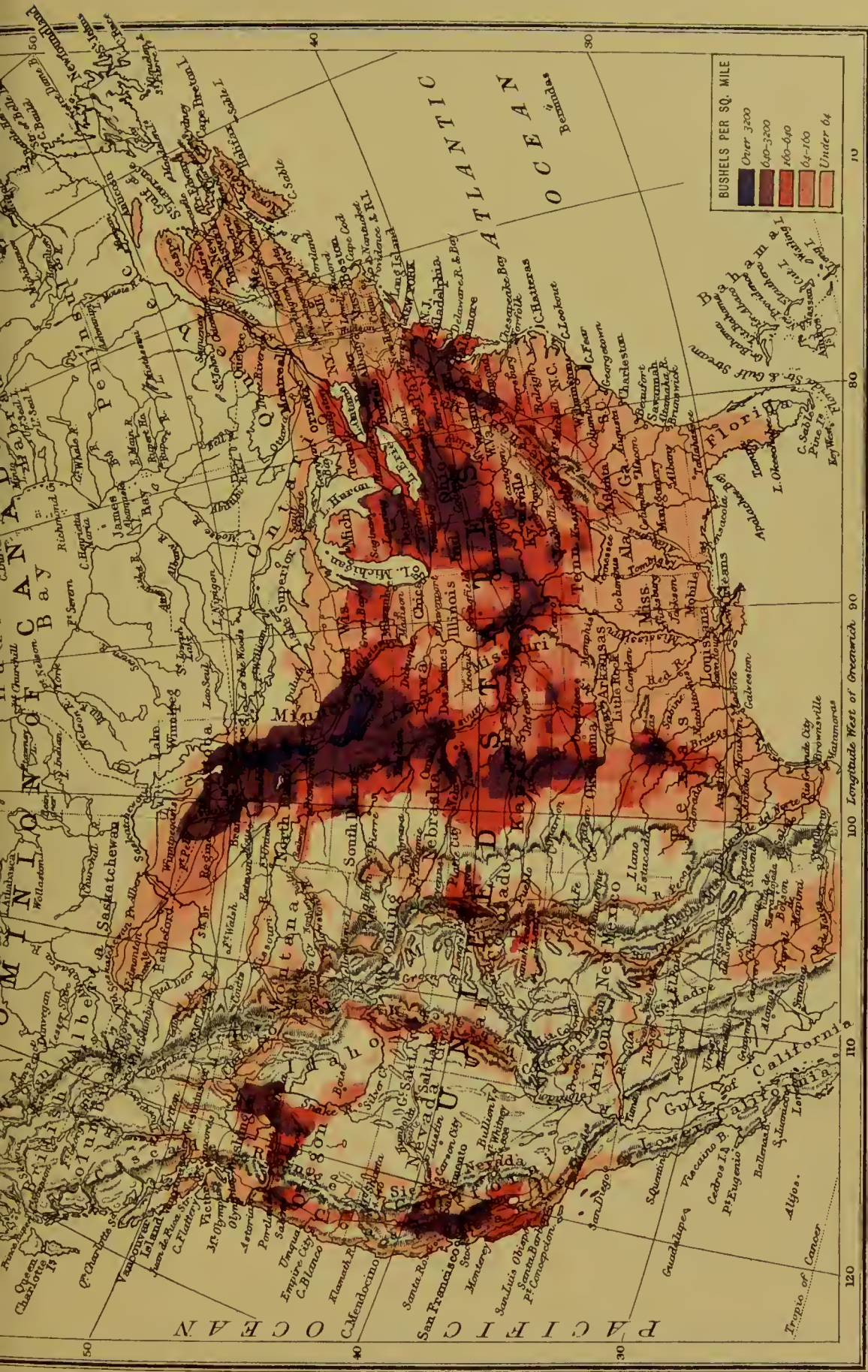
Roumania now raises on an average more wheat than she can consume, and in such ports as Braila and Galatz there are a few well-equipped mills, **Roumanian Flour.** which cultivate an export trade. At present Roumanian flour exports to this country are limited. In 1902 our receipts amounted to 7345 sacks, but the average for 1901-5 was only 2389 sacks.

Danish Flour. Years ago Denmark used to be a regular, if moderate, exporter of flour to Great Britain, but to-day our imports from this source are most insignificant. The annual average for 1901-5 was 173 sacks.

Of extra-European exporters the South American state of Chile may be noted, though its average for 1901-5 is but 2688 sacks. **Chilian Flour.** Chile is not a great wheat-raising land, but it seems to produce rather more wheat than it needs for home consumption.

Within the past few years British India has begun to export some flour to this country. These imports are included by the Board of Trade under the heading "Other British Possessions", but it is probable that the 13,700 and 33,716 sacks respectively entered under this heading for the calendar years 1904 and 1905 were largely milled in British India. In the great ports of that land are many well-fitted merchant mills, which at times are bound to have some surplus for export. Such Indian-milled flour as we have handled reflected great credit on the shippers, but, of course, one swallow does not make a summer. The flours exported to this country from India have evidently been made from carefully selected wheats, such as millers in this country could not readily procure. What proportion of such wheat may be available for Indian merchant millers it is difficult to say. In 1906 India's exports of flour to this country only reached 680 sacks, but rose to 3280 sacks in 1907.

In reviewing the growth of foreign flour imports into this country, it is evident that though the proportion of flour of foreign origin consumed in the United Kingdom is large, it is apparently on the decrease. **Decreasing Flour Imports.** Commencing with 1880, when the flour imports rose to nearly four million and a quarter sacks, the then population of rather less than 35,000,000 was estimated to consume over 31,000,000 sacks of 280 lb.



per annum. The consumption of foreign flour was then between 13 and 14 per cent of the total requirements. From this time the percentage increased rapidly. It was fully 20 per cent in 1883, and though it decreased a little during the three following years it had nearly reached 22 per cent in 1887, a year of heavy American imports. From this date there was a certain decline till 1892, when the 22-per-cent mark was exceeded, and in the succeeding year 23 per cent was reached and passed. In the course of the next five years the percentage fluctuated but never fell below 20, and was often well above 23. In 1899 it was fully equal to 25. In the first two years of the nineties it hung round 23 and 24, but dropped rapidly from 1902, descending in 1904 and 1905 first to 15 and then to somewhat over 12 per cent, where it stands at present. It must be remembered that the heavy imports of foreign flour which checked the expansion of British milling from 1898 to 1901 were almost entirely due to big surpluses in America, which allowed merchant millers in that country to flood our markets with cheap but excellent flour. Such conditions may not recur, but they may. At present the drift of social and economic factors in the United States does not favour big flour shipments here. For one thing, American millers are finding other markets than in Europe; still, a big crop is always possible in America. Moreover, Canada is increasing her wheat acreage in the far west by leaps and bounds, and the time will surely come when mills in the Canadian north-west will be driven to seek outlets for their surplus flour in this country. Flour milled from the hard spring wheat of Manitoba, Alberta, or Saskatchewan is bound to find a ready sale in this market, provided the price be reasonable.

It is said, and with perfect truth, that the millers of this country have within the past three or four years considerably increased their milling capacity, and it is argued that firms which have laid out scores of thousands of pounds in extending their milling capacity cannot afford to allow foreign flour to invade this market. It is perfectly true that since 1903 the milling capacity of the United Kingdom has been largely increased. These extensions consist chiefly in enlargements of the capacity of big port mills and in the erection of some new port mills. The enterprise shown in these undertakings was due partly to the indifferent harvests in America in 1903 and 1904. The fruits of this over-extension of capacity may be seen to-day in the fierce fight which the big port mills are waging among each other and against all their smaller competitors. During the past four or five years many inland mills of small or moderate capacity have been shut down never to reopen. Of this movement we may not yet have seen the end. The big mills in the ports can make flour cheaper than the inland mills, and are equipped to deal with almost any kind of wheat which may come on the market. This is not the case with the smaller country mills. But if the capacity of the large port mills were even bigger than it is, that would not prevent American and Canadian millers sending flour to this country, if they could only get wheat cheap enough to enable them to underbid

Growth of Mill-
ing Capacity
in Britain.

the British miller. The only advantage the British miller has to-day over his American competitor, which his predecessor of the eighties and nineties did not possess, is this, that the present surplus of Manitoba wheat Cheap Wheat in is large enough to leave sufficient for export. Thus the British Ports.

London or Liverpool miller can get at a reasonable price raw material equal to that enjoyed by his competitor in Minneapolis. Of course as mills grow in Canada the local competition for wheat will increase, and the price of Manitoba wheat in our markets will tend to rise. The future is always uncertain, but it is quite conceivable that while Russia, the great purveyor of strong wheat for British mills, might have a poor crop, Minnesota and the two Dakotas might reap a bumper crop, while again the harvest in Manitoba and the Canadian north-west might be

Possible Return
of American
Competition.

a partial failure owing to early frosts. In such a case the British port mills would be bound to meet severe American competition, no matter what their own capacity might be. Of course we are assuming that this country adheres to free trade.

CHAPTER LXV

HOW TO READ THE MARKET

Everyone who is interested in either wheat or flour tries to read the market; in other words, he is anxious to gauge the probable trend of the market from such indications as are to hand in the shape of crop estimates, statistics of wheat reserves, shipping activity, and so forth. This is an age in which everyone tries to get forward, and read the future course of events. The turf prophet is not without honour among people of a certain order of intelligence, though it must be confessed he has very slender data on which to base his vaticinations. In the case of wheat we have fortunately more

Market
Forecasts.

ample sources of information, and can predict more or less accurately the course of the markets from a careful study of statistics and other factors. In this country there are three journals exclusively devoted to interpreting the wheat and flour markets. In these papers the world's shipments are chronicled day by day, while the state of stocks the world over is likewise noted, so far as such information

Wheat and Flour
Market Journals.

can be ascertained. The progress and prospects of crops, with the results of harvests, are of course noted, while all important grain markets are duly reported. The periodical review of the market given by one at least of these papers is very luminous; but perhaps the most valuable information published by these journals consists of the statistics, which are generally accurate, and furnish a key to what is called the statistical position of wheat.

To anyone engaged in dealing day by day in wheat or flour these

journals are of value, but their perusal would take too much time from the day of the hard-working baker. It does not follow, however, that the user of flour cannot read the market within wide limits by noting and observing certain landmarks, so to speak. Prices are, of course, fixed by the relation of supply to demand. Hence the extreme importance of ascertaining the statistical position of wheat as closely as possible. For instance, if it should happen that the United States and Canada had both big crops in the same year in which Russia was blessed with a bumper crop, it would be safe to conclude that a cheap cereal year was before us, because an exportable surplus of say 40,000,000 qr. from those lands would be sure to be supplemented by some 10,000,000 to 20,000,000 qr. from other sources, such as Argentina, Australia, India, &c. An exportable surplus of 65,000,000 qr. would probably be sufficient to bring down the price of wheat well below a 30s. level, though we must not forget that the consumers of wheat are always growing in numbers. In the spring of 1894 the throwing on the European markets of the Argentine surplus of about 7,400,000 qr. sufficed to bring the value of wheat in the open markets of this country to a 20s. level. But it must be borne in mind that in that season America's wheat exports were heavy, amounting to 20,375,000 qr., while Russia shipped in the same cereal year 13,500,000 qr. In those days the needs of the importing countries ran around 50,000,000 qr. per season. It is exceptional for big crops to be raised all over the world in one and the same season; that the United States and Canada, Russia and Roumania, La Plata, Australasia, and India should all bear heavy crops in one season is most unlikely, though it may be possible. The meteorological conditions which exert so powerful an influence on crops are apt to vary widely from one quarter of the globe to the other; hence a poor crop in such a land as Russia in Europe is likely to be balanced by a good harvest in the United States. In 1891-2 Russia was in the throes of famine, owing to the failure of the crops in eighteen governments or provinces of European Russia, some of which are normally among the most productive of Russian wheatfields. Ultimately the Russian government was compelled to prohibit the export of wheat by imperial edict. During that cereal year the United States shipped in wheat and flour some 28,000,000 qr., while India—an uncertain shipper—exported 7,500,000 qr. On the other hand, one is almost afraid to think of the level to which wheat might have risen during the 1903-4 and 1904-5 cereal years, had not Russia and India come to the rescue and supplemented the serious falling off in American shipments, especially during the 1904-5 season. Thus does nature tend to redress the deficiency of a harvest in one country by abundance in another.

In estimating the value of different exporting lands as factors in the statistical problem, it is important to bear in mind the different seasons at which their respective crops are gathered. Harvesting is going on all the year round in some parts of the world.

Statistical Position of Wheat.

Compensations in Harvests.

Russian Government stops Exports.

Russia and India to the Rescue.

United States Harvests.

Argentine Harvest. For instance, in the United States the winter wheat crop is normally reaped in June and July, while the spring wheat is harvested in August; if late, in early September. The Argentine crop is cut in December, so also is the Australian; while in New Zealand wheat is harvested in January. The Indian wheat harvest is got in in February, March, and April, according to the latitude. The French harvest commences in the south late in June, and proceeds throughout July, the northern departments not completing the harvest till August. In Austria-Hungary harvesting is normally in full swing in July, while in Russia cutting commences in the south in July and proceeds throughout August in the central provinces and Poland; not till October is harvest completed in the northernmost governments of European Russia.

It is also well to note at what times the wheat of different lands begins to reach our markets. For instance, Plate wheats usually arrive from March onwards, Australians in April, Bombay shipments in June, Kurrachee in July, while American and South Russian winter wheat may reach us from the end of July right through August. South Russian spring wheats and Roumanian wheat usually begin to arrive freely in September, while October will bring us American spring wheat (when any is being shipped), and November will witness the arrival of Manitobas and wheat from the other north-western provinces of the Dominion whenever there is anything like a surplus for export. With regard to flour, that follows broadly on the same lines as wheat, but is naturally later in reaching us, and is sometimes subject to considerable delay. For instance, spring wheat flour from Minnesota, in the American north-west, might after a fairly good crop be expected to begin arriving in London, Liverpool, or Glasgow, from say the third week of October onwards; in 1905 a good deal of such flour was expected in London by the end of October, but it made no appearance, and even at the end of November was only arriving in dribbles. Not till the opening of 1906 did American spring wheat flour begin to reach London freely, and then it came like an avalanche. Early in January American flour began to arrive at the rate of 40,000 sacks per week, and one and the same boat would contain parcels bought on August, September, and October bills of lading. Obviously there had been great delay somewhere in forwarding this flour; probably a good deal of it had been lying in warehouses in American Atlantic ports waiting for low freights. Winter wheat flour may begin to reach this country in August, but is not usually much in evidence till September. Australian new-crop flour will not arrive much before March, April, or May. The first Argentine flour may reach us in March.

In reading the market it is essential to bear in mind that prices are determined largely by the supplies of a few exporting lands. The value

of wheat is determined in the last resort not by Chicago, but by the prices bid by buyers in the open markets of Liverpool, London, and Antwerp. The influence of duties upon wheat and flour is purely local; if a merchant in London or Antwerp is willing to bid 31s. c.i.f. for a cargo of Californian wheat, a buyer in Dunkirk will have to pay the same price plus the French duty, 12s. 2*d.* per qr. of 480 lb., or 43s. 3*d.* in all. The crops of the exporting lands are therefore of the utmost importance to all interested in wheat and flour.

It may be noted that while the European consumption of breadstuffs has increased very considerably during the past decade, so has supply steadily grown, chiefly through the spread of wheat culture in such lands of virgin soil as La Plata, Canada, and to some extent Australia. It will be convenient to bear in mind the chief lands from which European supplies are drawn, because these countries and their statistical positions are always essential factors in the market or price problem. Into the history of the parts played by these lands it is not necessary to enter here, because that has been reviewed in the chapter on "The Sources of our Flour Supply". But it should be kept steadily in mind that the United States and Canada, Argentina, India, Australasia, Russia, and Roumania are all exporting lands of more or less importance.

To read the market with any hope of success we must take into account all kinds of factors; above all we must be chary of drawing conclusions from a few salient features of the market. For instance, while the floating stock, as the wheat afloat and headed for this country and the Continent is currently termed, is undoubtedly a most important item, its bearing on the market must not be estimated merely from its size, because out of 4,500,000 qr. afloat 2,500,000 qr. might be very distant from our shores, having been despatched from Australian and Californian ports. The floating stocks exercise the more influence on the market the nearer they are to the ports of consumption, which is of course only natural. One of the corn-trade journals which busy themselves with the collection of grain statistics makes a point of analysing the sources of the floating supply. But the mere knowledge of the actual amount of wheat afloat and headed for Europe is not all in all; beyond this one needs to get some idea of how demand is likely to vary. This country with its 44,000,000 people, and its relatively small production of wheat, is necessarily a big customer for wheat—probably in a normal year our demand for foreign wheat (and flour reckoned as wheat) could not now be put much under 27,000,000 qr.—but Great Britain and Ireland cannot absorb all the surplus of the exporting lands, and given liberal exports the market is usually strong or weak in proportion to the assistance rendered to Great Britain, the premier consumer of foreign wheat, by the Continent of Europe. This varies a good deal.

With the exception of Holland and Denmark, free-trading lands, and

of Belgium and Switzerland, the former admitting wheat free and the latter levying a duty of 6*d.* per quarter of 480 lb., almost

Effect of Tariffs. all Continental countries of set purpose hinder the import of wheat by high tariffs. The object is, no doubt, to encourage as much as may be the home growth of wheat, but the practical effect is to check imports of wheat unless most urgently needed. In spite of these artificial barriers the Continent is in the aggregate a considerable importer of wheat, and at times a bad crop—as in France in 1897, and

Intermittent Continental Demands. in Germany in 1905—will cause heavy imports. In France the duty of 12*s.* 2*d.* per quarter was entirely suspended from May 4 to July 1, 1898, and millions of quarters poured in.

Germany, with a poor crop in 1905 both of wheat and rye—at any rate as far as quality was concerned—imported about 7½ million qr. of wheat between the 1st August, 1905, and the 28th February, 1906, in spite of a duty of 7*s.* 6*d.* per quarter of 480 lb. On the 1st March the new duties came into force, the minimum due on wheat being brought up to some 12*s.* per quarter, but still imports proceeded.

It is easy to see how important a factor is Continental demand in the price problem. In a general way France has become self-sufficing so far as wheat is concerned, her imports in some recent **Continental Imports.** years having been confined to a few hundred thousand quarters (including flour reckoned as wheat); but France is certain to have a crop failure now and again, and then she is perforce an importer. Germany, in spite of her almost frantic endeavours to stimulate wheat production, is bound to be an importer of wheat, more or less. Up to about 1890 Germany imported only some 3,000,000 qr. of wheat for her own consumption, but since then the demand for wheaten bread has been increasing steadily, and the imports of 1896–1903 averaged between 7,000,000 and 8,000,000 quarters per annum. The present average needs of Germany cannot be far short of 10,000,000 qr. per annum. For some reason or other the working classes in the Fatherland seem to be losing their taste for rye bread, or perhaps it would be more correct to say that the demand for wheaten bread is extending into quarters in which it was previously unknown.

In this connection it should not be forgotten that the cereal rye is an important factor in the formation of prices, and that in spite of the **Effects of Rye on Wheat Prices.** fact that in this country rye flour only meets the smallest demand in the Jewish quarters of a few great cities. Germany raises some 42,000,000 qr. of rye as compared with 18,000,000 qr. of wheat. In Austria-Hungary the production of rye (and spelt) is, striking an average, as about 15,000,000 qr. to 25,500,000 qr. of wheat. In European Russia the mean production of wheat is about 40,000,000 qr. to 85,000,000 qr. of rye; while in Russian Poland, where not more than about 2,000,000 qr. of wheat is raised, at least three times that amount of rye is grown. In the Scandinavian countries, again (Sweden, Norway, and Denmark), the production of rye greatly exceeds that of wheat. It

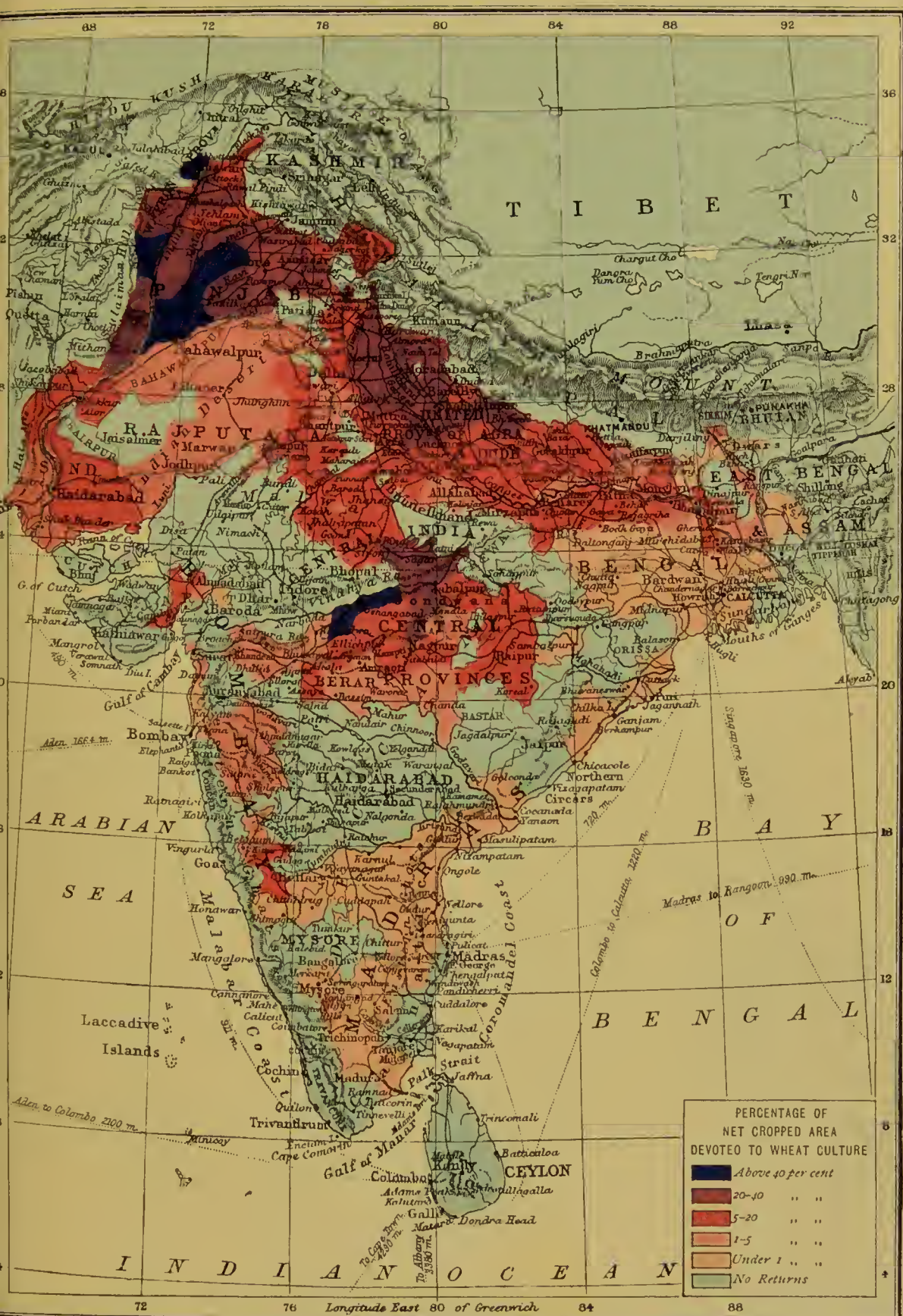
is clear, then, that a failure of the rye crop in such a country as Germany or Russia would seriously affect the balance of the international corn trade. If Germany reaped a short crop of rye, she would inevitably have to import more wheat; if the shortage occurred in Russia, the exportable surplus of wheat would be lessened, because the Russian peasantry largely depend on rye for their daily bread; wheat, being more or less saleable in European markets, is in normal times an article of export, though Russia is also an exporter of rye to the amount of 5,000,000 to 6,000,000 quarters per annum. In taking into consideration the Continental demand, an important factor is the condition in which grain is gathered. A really wet harvest in France or Germany would mean the importation of a sensible quantity of dry foreign grain to mix with the damp wheat or rye, as the case might be—unless, indeed, there happened to be a large stock of dry grain left over from the preceding harvest.

It is evident that the factors which influence the market are more complex than might appear at first sight. As prices are undoubtedly governed by the relation of supply to demand, statistics of stocks of all kinds are always in request among students of the market. It is for this reason that the condition of the American "visible supply" is enabled over daily from the other side of the Atlantic. Visible Supply. With regard to this visible supply, the most trustworthy version is that collected and published by Bradstreet's agency. Bradstreet. This is said to be made up from returns received from upwards of 1000 different points. Briefly, this return covers the stocks in public elevators in the United States and in Canada east of the Rocky Mountains; in other words, this is the visible supply as contrasted with the invisible supply in farmers' hands. This stock varies with the abundance or otherwise of wheat, and also with the season of the year. As the cereal, or, to use the American phrase, the crop year draws to its close in June, the stocks in public elevators run down, and after a short crop (as in 1904) get very low indeed. As soon as the winter wheat is gathered—and in the south-west a great deal of wheat has been cut by the middle of July—the farmers begin to deliver at primary points, or country elevator towns, whence the wheat makes its way in due course to the terminal elevators at such places as St. Louis, Chicago, Milwaukee, and others. Movements of Wheat in America. The word elevator is here used in its American sense of a grain warehouse. This is not the place to discuss the American elevator system. Suffice it to say that the elevator and railway companies of America, whatever their exact financial relations may be, are in a sense twin brothers. But for the elevators, which act as magnets The American Elevators. in drawing wheat, the railroads, with their mileage running into hundreds of thousands of miles, could never have rendered such enormous services to the American farmer.

The importance of the visible supply as a factor in the statistical

position needs no demonstration. But it would also be easy to exaggerate it. This item in the world's cereal statistics is often accepted as an infallible index to the size of the United States crop of wheat, but this is not the case. At least the visible supply can only be taken as a guide to the crop with reservations and qualifications. No doubt a liberal and well-sustained flow of wheat at primary points is *prima facie* evidence of a liberal crop, but the price the farmer is receiving must be closely examined. A good price will often draw wheat out of all proportion to the size of the crop. For instance, a poor Russian harvest synchronizing with a failure of the Indian crop would be certain to raise prices to a high level, especially in the absence of large crops in Germany and Central Europe. Under such conditions American farmers would be likely to become free sellers, and for a time the pressure of supplies might bring down prices. This, in an ordinary way, would tend to reduce deliveries. Supposing, however, the Argentine crop gave a brilliant promise, while cheerful cables were to hand from Australasia, the American holder would probably keep on pushing his wheat into the market, because he will argue that it is better to get 80 cents a bushel for his wheat than keep it till free shipments from Argentina have knocked down wheat values to 72 cents.

Towards the middle of April, 1906, Bradstreet's reported the visible supply east of the Rockies at 7,875,000 qr., as compared with 5,491,000 qr. and 6,030,000 qr. at the same period in 1905 and 1904 respectively. For this time of the year the visible supply in question—equal, namely, to nearly 8,000,000 qr.—was a respectable figure. Yet the exports of wheat from the United States remained on the moderate scale of something under 300,000 quarters per week; this total included, moreover, a considerable proportion of Manitoba (Canadian) wheat and of American flour, which is statistically reckoned as wheat. It is worth noting that when America is shipping only on a moderate scale, a large proportion of her shipments is apt to go in the form of flour. The official figures for the eight months ended February, 1905, showed a total exportation from all the United States of 4,157,218 qr.; of this no less than $87\frac{1}{3}$ per cent went in the shape of flour. During the same period of 1905-6 the exports amounted to 8,894,429 qr. In this case the percentage exported as flour was only $61\frac{2}{3}$ per cent. The explanation of the overwhelming proportion of flour exports, when the total volume of shipments was so small, is simple enough. Wheat was no longer on an export basis. That is to say, it could not compete with Russian or Plate wheats in the markets of Europe. A poor crop (quantitatively and qualitatively) had raised American wheat to a level which, with carriage and freightage added, would have brought No. 1 Northern Duluth to many shillings above No. 1 Northern Manitoba. It may be asked how the American miller can export flour when wheat is no longer on an export basis. The answer is, that the American miller



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John Bartholomew & Co. Ltd.



holds so much to his connection in Europe that in times of wheat stringency he will ship flour without profit, or even at some loss, rather than lose all touch with the European market. With regard to selling at a loss, it is not probable that the American miller is more given to this practice than any other member of the craft. He can to some extent recoup himself by higher prices in his own markets. The amount of patent flour shipped from American Atlantic ports during the 1904-5 season was very small, and doubtless would have been still less but for the fact that one or two of the biggest Minneapolis mills were able to import Manitoba and Canadian spring wheat and mill it in bond. The bulk of the American spring wheat flour sent over here during that season was of the bakers' grade known in America as "clears".

Why American
Millers can Ex-
port Flour from
Dear Wheat.

Returning to the visible supply and its value as an index of the statistical position, it might seem strange at first blush that with first-hand stocks of nearly 8,000,000 qr., next to no American wheat was being shipped. It was the more remarkable, because the level of No. 1 Northern Duluth and of No. 1 Northern Manitoba was very nearly the same for some little time. But the explanation no doubt is this, that a better market for wheat is always to hand at Minneapolis and Duluth than at Winnipeg. The enormous milling capacity of Minneapolis, well in excess of 300,000 sacks of 280 lb. per week, is naturally loath to let wheat go which its mills can grind into saleable flour. In the spring of 1905 the stock of wheat at Minneapolis and Duluth was 1,875,000 qr. In the month of April, 1906, it stood at 3,250,000 qr., or not very far from half the total visible supply of the United States and Canada. Thus the distribution of the visible supply is an item of some significance as well as its total size. Besides the American visible supply, with the state of stocks on the Pacific coast of America, which is reckoned separately from the supply east of the Rockies, the student of the market is interested in the visible supply in Argentina, which consists of returns of wheat in the port elevators, and granaries at railway terminal points; in the Russian and Roumanian port stocks; in port or first-hand stocks in the United Kingdom, at Antwerp and Rotterdam, and generally in all great centres of the grain and milling trades, as, for instance, at Budapest.

Hitherto we have been speaking only of first-hand stocks, but it must also be remembered that second-hand breadstuff stocks, or those in the hands of millers and bakers, also count. These are naturally much harder to estimate; but, speaking generally, it is safe to say that within the past few years the grain-carrying capacity of British mills has considerably increased. While the number of flour mills worth taking into account in this country has steadily decreased, the capacity of the port mills has been very sensibly increased, and at the same time the warehousing accommodation has been enlarged by the erection or expansion of silo houses. One effect of this movement has no doubt been to reduce the size of first-hand stocks.

CHAPTER LXVI

CROP ESTIMATES

Estimates of crops are necessarily of the greatest interest to all concerned in market movements. Unfortunately all estimates are not by any means of equal value. Official figures are often the least trustworthy. Until recent years the estimates of the Washington Department of Agriculture were far from meeting with universal acceptance; they were held by the best commercial authorities to err in the direction of underestimation. It is certain that in the nineties the movement of crops to market often falsified the Bureau's estimates. Of late years a different basis for crop estimation has been adopted, and nowadays the official figures may be accepted as approximately correct estimates of the United States crop. In a general way all official preliminary crop estimates are to be accepted with caution, and to this rule the estimates published by the Canadian and Argentine Governments in October and November respectively are no exceptions. Russian official estimates are often called in question, and in dealing with Russian statistics it must not be forgotten that two distinct bases of calculation are used by the Department of Agriculture. The figures published in the later autumn are the most trustworthy. Russian official crop estimates have often exaggerated the yield, but the returns respecting the port stocks and the weekly shipments of grain are believed to be fairly accurate.

Indian official statistics of the crops of grain are carefully compiled, and are usually trustworthy. The French official crop statistics are prepared with due diligence and are worthy of more or less respect, though they are periodically assailed by the millers' association, which conducts an enquiry on its own authority and maintains that the official figures are persistently understated.

It will be seen that whereas in some countries officials have a tendency to overestimate harvests, in others the bias is just the other way. In this connection it must not be forgotten that in a land which raises a huge cereal crop it is the interest of the growers, to put it mildly, not to exaggerate the size of harvests, because of the obvious tendency of a big supply to depreciate prices. Whether this consideration has ever induced officials of set purpose to minimize crop results is a moot point. It is more probable that official crop estimators have erred, when they have erred, through ignorance. The task of estimating a crop, especially in the early days, is by no means easy. A special difficulty in the path of an official estimator is due to the suspicions which any man with a pencil, notebook, and an official air invariably arouses in the breasts of rustics. He is looked on as a taxgatherer in disguise, and it would be surprising if he received information of unimpeachable accuracy. Our own Board of

Unsafe
Official
Statistics.

Official Bias.

Possible Cause of
Small Estimates.

Farmers
Dislike
Officials.

Agriculture has not always been very successful in estimating the size of our crops, which nowadays are considered respectable if they run to 7,500,000 qr. What must be the task before the French estimators who have to get a fairly close estimate of a crop of 42,000,000 qr. or more? The German official figures are generally trustworthy, and the same may be said of the Austro-Hungarian returns.

Of course, standing crops are not secure till they are in the barn or otherwise under cover. The old proverb concerning the many a slip betwixt cup and lip has been brought home with bitter force to many a farmer, who has seen a valuable crop destroyed or sorely depreciated within a week or so of harvest. It is easy to understand what interest the market takes in weather reports while crops are in the critical stage, or are fast approaching the cutting period. Weather Reports Influence Prices. Wheat is heir to almost as many ills as flesh itself. A cold snap in May might catch the plant in the milky stage and wither it; in Effects of Cold in May. climates like that of Western Canada and North-Western America this is a special danger to which spring wheat is exposed if sown late. The plant will under such conditions not enter the critical period of its growth till night frosts have made their appearance, which may be in August or at the end of July, and then the wheat is nipped Frosts Destroy Spring Wheats. with disastrous effects to its gluten. Flour milled from frosted wheat is apt to make "runny" dough, something like flour made from sprouted wheat. Wheat again may be killed by severe frost when it has just emerged from the ground; this has happened more than once to winter wheat in such parts of the United States as Kansas and Missouri. The plant perished for lack of a covering of fleecy snow. At certain periods of the life of wheat drought is almost as harmful as Drought Damages Wheat. too much water at another stage. In this country probably more mischief has been wrought by untimely and protracted rains. The wet summer of 1903 rendered at least 25 per cent of the British crop unfit for milling. How serious a calamity a wet Damage by Rains. harvest must have been in the days, not so far removed from us, when this land grew three-fourths of its wheat, can easily be imagined. A metropolitan baker of venerable aspect once assured the writer that he remembered in the old days alum going into his own shop Use of Alum with Sprouted Wheat Flour. by the hundredweight after a wet harvest. Hundredweight was palpably a gross exaggeration, but that alum was largely used in those days after the crop had been gathered wet is a fact that none of the older generation of bakers would dispute.

A chapter might be written on "weather markets" and their history. Naturalists tell us that the petted lapdog, when he twists round and round before settling himself on the cosy hearthrug, is merely repeating the trick his remote ancestors acquired when they made their beds on dry leaves in the forests. In the same way the baker to-day is often much concerned by rainy weather in July, though to-day the native wheat crop forms but one-fifth of our breadstuffs supply instead of three-fourths. Yet Mark

Lane itself, the headquarters of the corn trade, is proverbially sensitive to weather influences. Fine weather in June has a softening, rain in July a hardening trend. Yet in this market about 1 qr. of English wheat is sold as compared with 30 qr. of foreign wheat, which grows and ripens irrespective of the vagaries of this climate. Of course, the proportion of wheat still raised in this country, insignificant as it may be, relatively speaking, is an item in our breadstuffs supply which could not drop out without the market being very seriously affected. But rain in this country, even unduly prolonged, while the wheat is fast ripening to harvest, has not the same dire significance it had in the days of our fathers.

While weather has a strong influence on markets—severe drought in India leading to famine is a familiar example—it is always advisable to scan carefully reports of crop damage from bad weather, from whatever quarter such news comes. Crop scares, as they are termed, are always more or less in season in the spring of the year, when the growing wheat in many lands is in a critical condition. Sometimes the scare has a large substratum of truth; very often an ounce of fact is worked into a ton of misrepresentation. Such scares are the stock in trade of the bull party in the option markets of America, which play so important a part in fixing wheat values in that country.

CHAPTER LXVII

FORWARD TRADING AND OPTIONS

No account, however sketchy, of the wheat market could be complete without some reference to the system of forward trading, known both as futures and options, which has become so great an institution in America, and is in active existence at Liverpool, the greatest wheat market of the Old World. An "option" deal is a transaction in which a merchant or speculator sells a quantity of wheat or other produce which he may not possess, this sale to be completed by the stipulated delivery of the goods at some future time, say three months after the bargain was made. At the end of that period the seller in the majority of cases delivers no produce—because usually he has none, and did not intend to have any, to deliver—but if the then market price of the commodity in which the deal took place had risen in price, the seller would require to pay the buyer cash equivalent to the amount of the difference in the price at which the stuff had been sold and the higher market price at the time of stipulated delivery. But if, on the other hand, prices had fallen, then the buyer would have to hand over to the seller the difference between the market price at stipulated time of delivery and that at which the com-

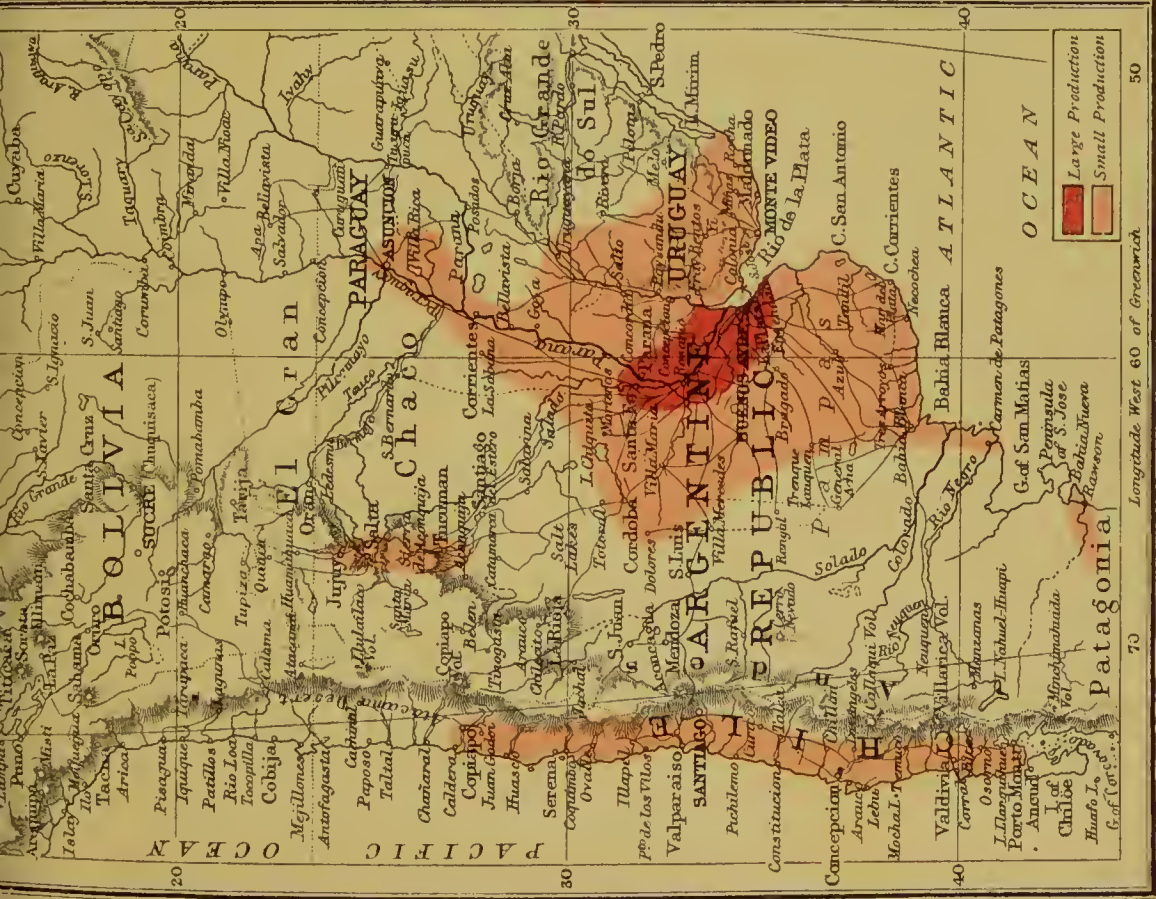
modity had been sold. Options and futures have often formed the subject of leading and other articles in the daily press, where they are usually denounced as instruments of sheer gaming. With the morality of options this article is not concerned, but we will endeavour to give some account of their actual operation and effects on the market. Options are not a very ancient institution. In America they date from about thirty years or so ago. The flourishing futures market of Liverpool was started some twenty-three years since. London for some reason or other History of London Options. has never taken kindly to options, though in the eighties an option market was started and worked for some little time. It died out, but was succeeded by a much better organized market in 1896, which for a time had a good deal of vogue. The contracts were guaranteed by the Produce Brokers Exchange, and for some years two "calls" were held daily on the Baltic, while little groups of brokers used to do Business "on the Nod". business "on the nod", as it was called, at Mark Lane, whenever there was any activity in wheat. These contracts had all to be registered by the exchange. The revived London market came to an end about four years ago. Its death-blow came from the dearth of American and Canadian spring wheat, resulting from the poor crops of 1903 and 1904. The original contract basis of the London option market was No. 1 Northern Duluth; later on it was permissible to substitute spring wheat of equal quality for this grade. With regard to this point, it must not be supposed that in dealing with options or futures it is allowable to sell or buy any kind of wheat. A contract grade is invariably fixed by the exchange, and the seller may be called on by the buyer to actually tender the wheat he has sold. Wheat of different grade or inferior quality can usually be tendered, but only on payment of a penalty, which in some cases is prohibitive. It will be remembered that during the Leiter Corner in Wheat. historic Leiter corner in Chicago in 1898, Armour, the packing king as he was often called, from the huge meat-preserving business he controlled in Chicago, sold Joseph Leiter immense quantities of wheat, and by dint of great exertions rushed train after train of cars of wheat from the north-west into Chicago to be ready to meet his engagements. When the scarcity of American springs brought London options to a standstill, an attempt was made to find a substitute in Argentine and Indian wheats (which just then were plentiful), but the attempt failed, and options in London are now a thing of the past.

In Liverpool it is far otherwise. The futures market there has become a great commercial institution. The main objection taken to future dealings in produce by moralists lies in the facilities it affords for Gambling in Futures. gambling. But the Liverpool futures market is so conducted that every obstacle is put in the way of the outsider, who is merely anxious "to have a flutter", as the saying goes. The same was true of the London option market while it existed. Under the Liverpool system no operator can make a deal in futures without providing a "margin", the equivalent of the cover demanded by the stockbroker from his clients. All differ-

ences have to be settled day by day, and as soon as a margin is eaten up the depositor is notified of the fact, whereupon a further margin is required before fresh business can be transacted. It is quite safe to say that an overwhelming proportion of the futures put through in Liverpool is on **Real Business** account of solid business firms engaged in the corn trade. **in Futures.**

The object of these transactions is to hedge some deal in actual wheat or maize. A merchant may have bought a cargo of wheat to arrive at or about a certain date, and to avoid the risk of the wheat declining before its arrival he will sell an option against it. In this way he can generally insure himself to some extent against loss on his deal in wheat. Big millers by buying an option may cover forward sales of flour. It has already been explained that the buyer of an option or future can compel a tender of the actual wheat, or enforce a penalty for non-compliance with this condition, but, as a matter of fact, the amount of wheat actually tendered is very small, probably not more than 3 per cent of the actual quantities bought. The difference is usually settled in money, which really meets the case exactly, because the main object of those who engage in these operations is to "hedge" themselves against loss on transactions in actual grain. Of course options can never be altogether destitute of some risk. In "hedging" operations care has to be exercised, or the merchant may lose both on the purchase of actual wheat and on the option he has sold to cover his purchase. This does sometimes happen, and there are instances on record in which the consequences of such an operation have been disastrous. But double losses of this description are the exception and not the rule. Whatever abuses options may have engendered in such a market as Chicago, they have their commercial uses. A Manitoba miller, for instance, may sell flour to a London importer for September-October dispatch two months or so before harvest. But with a really promising crop the option will probably enable the miller to sell at a workable price. He can effectually cover his sale by buying an option, which thus fills the place for him of actual wheat. Broadly viewed they **Losses in** are a means of insuring corn merchants against those heavy **Corn Trade.** losses which were so marked a feature of the trade in the middle of the last century and even up to twenty years ago. Nowadays we rarely hear of the smashes which used periodically to strew the corn exchange with wrecks, and this is in some degree due to the judicious use of options. The corn trade is, from its very nature, full of risk, and in the old days when wheat was liable to rise or drop 10s. per quarter in a single day, when the telegraph had no existence, and merchants had to work practically in the dark, it must have been one of the most hazardous branches of commerce. Nowadays when a corn merchant fails it is almost always his own fault. Either he has been trading with insufficient capital, or he has been guilty of rash speculation.

One possible but not wholly welcome effect of the option system is this, that it may have reduced the stocks of wheat maintained in our ports. This, from the point of view of our national security, is an undoubted



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V—AUSTRALIA

drawback, but it is an inevitable corollary of the conditions of to-day. Our average imports of breadstuffs at the present time are about treble those of thirty years ago, but the stocks now-adays held by importers are not one-third of those maintained thirty years back. This cannot be all due to options. Putting aside Californian wheat, which is still brought to this country in sailing vessels, the corn trade carries on its shipping operations entirely by steam. Hence merchants can get wheat to this country even from distant parts in as many weeks as it formerly took months. Moreover, ocean cables enable an order to be flashed round the world in no time. Apart from the risks of shipwreck and war—two contingencies which our forefathers described as acts of God and of the king's enemies—the importer to-day can buy his wheat at almost any point on the globe where it may be to his advantage to purchase, and can forecast with reasonable certainty when it will reach him. Necessarily there is not the need for big stocks which existed twenty-five to thirty years ago, despite the fact that the home production is not above one-half of what it was then. But still options may have helped to lessen the stocks carried by importers. They might have that effect merely from the facility they give the merchant for buying at his own good time.

Option Trading
tends to Reduce
Port Stocks.

Sailing and
Steam Ships.

Why Small
Stocks are Kept.

The charge has often been made against options that they place the market at the mercy of manipulators or "riggers", as people like to call them. This is partly true, but it is also much exaggerated. In the middle of the nineties, when wheat dropped for a time to 20s. per quarter, the cry was heard that the poor farmer could not get a fair price for his crop because speculators were "bearing" wheat, that is selling options of wheat. But a year or two passed, and the Leiter corner startled the world as perhaps it had not been moved since the dark days of the Irish famine, or of the bread riots in Britain and France at the close of the eighteenth and the dawn of the nineteenth century. It was about the year 1891 that a great convention of millers was held at Minneapolis, and passed a resolution denouncing options as tending to inflate wheat values. Only a few weeks before, a mass meeting of farmers held at some place in Minnesota had passed a resolution declaring that options unduly depressed wheat values. Now fluctuations in the prices of barley have during the past twenty years been quite as sharp, to say the least, as those of wheat and maize. But though Chicago, New York, and Liverpool have options on wheat and maize, they know nothing of future dealings in barley.

Rigging the
Market.

Those who accuse gamblers of making wheat dear, or the reverse, by means of option or future dealings are simply confusing cause and effect. Neither wheat, cotton, nor any other article which is the subject of futures, has ever been made dearer or cheaper merely by "bulling" and "bearing". The market operations so described consist simply of buying and selling, and are not purely haphazard work. Those who dabble in such business base their operations, if they are speculators, on the statistical position. Their deals represent their views of the

Bulls and Bears.

market, because obviously no one would sell or buy wheat unless he expected a rise of some sort, while nobody would bear or sell unless he looked for a drop. But the essential point to remember is this, that both buyer and seller work according to their reading of the market. The bull may depend on what he deems to be growing demand, and may or may not underestimate supply. The bear, on the other hand, may or may not overestimate supply. In either case these "futures" are largely based on estimates, correct or incorrect, of supply and demand, the only real basis of market values. It is quite incorrect to suppose that the market is ruled by sales or purchases of paper wheat, though it is perfectly true that the vast majority of option sales represent fictitious sales in the sense that the bargain concluded will be adjusted not by payment against delivery of goods, but by a payment of price difference. No one, however, is deceived by the magnitude of these fictitious sales into believing the actual supply is larger than it is—no one, that is, who has any knowledge of the market. The truth is that no gambler, however bold, can pull a market up or down when the force of nature is pulling the other way.

It must not be supposed that Leiter made his corner by merely buying "paper wheat". In the course of his operations he held at one time 1,600,000 qr. of actual wheat, and controlled about 3,500,000 qr. more. During the months he was busy with wheat he exported over 3,000,000 qr., a good deal of which came to this country. He bought wheat at the opening of his deal at 21s. 7d. per quarter of 480 lb., which was forced for a time as high as 61s. 8d. per quarter. Had he realized his profits in May, 1898, many people believe he would have cleared £1,000,000 sterling. As it was, he ultimately lost that sum, and a good deal over. The end of the Leiter corner has been graphically but truthfully described by Norris in his realistic novel *The Pit*, which deals with a fictitious character who attempted a huge corner and failed, just as Leiter failed. "Corner wheat! It's the wheat that has cornered me. It's like holding a wolf by the ears; bad to hold on, but worse to let go." Finally, the bold speculator was overwhelmed by a wheat avalanche: "It was the wheat, the wheat! It was on the move again. From the farms of Illinois and Iowa, from the ranches of Kansas and Nebraska, from all the reaches of the middle west, the wheat, like a tidal wave, was rising, rising. Almighty, blood-brother to the earthquake, coeval with the volcano and the whirlwind, that gigantic world-force, that colossal billow, Nourisher of the Nations, was swelling and advancing." Such will be the end of any subsequent attempt to corner wheat if continued long enough. Leiter, as we have seen, would have made huge profits had he stopped in time; but that the gambler never can manage.

Possibilities of Small Wheat Corners. Though in the long run supply and demand set futures and options at defiance, it would not be true to say that corners are figments of imagination. In a small way corners are being run all the year round in option markets, but they seldom go

far. They are not intended to. A strong speculator or a syndicate of operators will make a corner whenever a contraet grade happens to be rather short; but, generally speaking, these manipulations are soon over. The bulls who have engineered the corner take their profits; then there is a break, and the bears have their way again. These operations are termed manipulations, and in a sense they are; but it is impossible to manipulate a market in any direetion unless there is some element of strength or weakness on which the operator can work. The worst that can be alleged against options is this, that in the hands of determined operators they tend to exaggerate the effects both of seareity and abundanee. Had no Leiter corner been made, the diminished supply of wheat in the world would have brought high prices in the 1897-8 cereal year, but probably not such sensational figures as were actually reached. The reaetion from such high priees is invariably severe, and for a time values are apt to be unduly depressed. In times of great abundanee the bears have their look in, but it is clear that there can be no bears without bulls, and conversely no bulls without bears: the seller presupposes a buyer, and vice versa.

Speculators
can Work with
Tide Only.

Perhaps the best way of getting an idea of the real faetors underlying the movements of the option markets is to take one day's telegrams from Chicago and New York. Here is the record of the doings of May, 18, 1906, in the Chicago "Futures" market:—

"Wheat opened easy, $\frac{1}{4}$ to $\frac{1}{2}$ e. lower, on unfavourable cables, weakness in Minneapolis, heavy weekly shipments from Argentina, commission house selling, and much-needed showers falling in Kansas. An advance ensued on unfavourable erop news from the Ohio Valley, good outside support, active covering of shorts, a better demand for eash grain at Minneapolis, and a bullish 'Modern Miller' report. Realizing and comission house selling eaused a reaetion finally, and the market elosed barely steady, $\frac{1}{8}$ to $\frac{1}{2}$ e. down.

A Day's Move-
ment of the
Chicago Market.

| | | May. | | July. | | Sept. | | Dec. |
|------------|-----|------------------|-------|------------------|-------|------------------|-------|--------------------|
| To-day ... | ... | 84 $\frac{5}{8}$ | ..... | 82 $\frac{1}{2}$ | ..... | 80 $\frac{5}{8}$ | ..... | 80 $\frac{1}{2}$ |
| Yesterday | ... | 84 $\frac{3}{4}$ | ..... | 83 | ..... | 80 $\frac{7}{8}$ | ..... | 80 $\frac{7}{8}$ " |

Now let us take the New York report for the same day. It ran:—

"Wheat opened easy, at $\frac{1}{4}$ c. full, and further weakened under adverse cables, lower Minneapolis advices, heavy weekly shipments from the Argentine, showers in Kansas, and comission house selling, then rallied on good outside support, bad crop news from the Ohio Valley, active covering of shorts, and a better demand for eash grain at Minneapolis. Subsequent realizing was offset by the bullish 'Modern Miller' report, but comission houses sold later, and market elosed barely steady, at $\frac{1}{2}$ c. fall.

The New
York Market.

| | | May. | | July. | | Sept. | | Dec. |
|------------|-----|------------------|-------|------------------|--------|------------------|-------|------|
| To-day ... | ... | 90 $\frac{1}{2}$ | ..... | 88 $\frac{1}{2}$ | ..... | 85 $\frac{5}{8}$ | ..... | 86 |
| Yesterday | ... | 91 | ..... | 89 | .. ... | 86 $\frac{1}{8}$ | ..... | —" |

It may be noted that the contract grades, which form the basis of all dealings in options, are not identical at Chicago and New York. Nevertheless the two markets, as we have seen, are dominated by much the same factors, and run, so to speak, on parallel lines. Both markets are very sensitive to shipping activity, to crop reports, to the condition of other American markets, as well as to the market operations known as "covering", "realizing", and "commission house selling". So sensitive are these markets to weather reports that at critical seasons mere predictions of needed rain will affect prices. It will be observed that prices were higher at New York than at Chicago, the May option in the latter market being about equal to 28s. 2d. per quarter of 480 lb. as compared with 30s. 2d. at New York. The more distant months were lower in price, till December wheat fell to 28s. 8d. at New York and 26s. 10d. at Chicago. This means, of course, that the market looks on wheat in December as likely to be cheaper than May, July, or September. Without for one moment attributing infallibility to the option market quotations, they are unquestionably an index to the trend of prices that no student of the markets can afford to neglect.

CHAPTER LXVIII

FACTORY LAWS

The theory of the courts is that everybody knows the law; at least the plea of ignorance is not accepted as an excuse for any breach of a law. The practice of the courts and the business of lawyers are maintained because so few people know the law. Bakers, so far as they are bakehouse or factory owners, are subject to the general regulations which apply to all non-textile factories, as well as to some regulations specially applicable to the trade. The statute containing the greater part of these regulations is the "Factory and Workshop Act, 1901". Section 1 of this Act deals with sanitary regulations. The most important of these applicable to bakeries is the necessity for periodic cleaning and limewashing of the walls, but the special regulations are given farther on. The district medical officer of health or a factory inspector is empowered to see to the carrying out of these regulations, and if the latter informs a district council (in Scotland, the local authority under the Public Health Act of 1897), which is the authority enforcing the Act, that a factory is not maintained according to the regulations, and the council refuses to administer the Act, the inspector may take steps for the enforcement of these regulations and recover expenses from the council.

Section 6 of the Act is of interest to bakers, although its provisions are rarely insisted upon in their case, as it was evidently intended to

apply to factories that might be too cold rather than to those that might be too hot. "In every factory and workshop adequate measures must be taken for securing and maintaining a reasonable temperature in each room in which any person is employed, but the measures so taken must not interfere with the purity of the air of any room in which any person is employed. The Secretary of State may, by special order, direct with respect to any class of factories or workshops, that thermometers be provided, maintained, and kept in working order, in such place and position as may be specified in the order."

Regulations as
to Temperature
of Factory.

Section 9 of the Act decrees that "Every factory and workshop must be provided with sufficient and suitable accommodation in the way of sanitary conveniences, regard being had to the number of persons employed in or in attendance at the factory or workshop, and also where persons of both sexes are or are intended to be employed, with proper separate accommodation for persons of each sex". What is sufficient and proper accommodation may be determined by the Secretary of State, of course through the inspectors.

Sanitary
Conveniences.

In view of the provisions of the Workmen's Compensation Act it is of great importance that the regulations in the Factory Act regarding fencing of machinery and steam boiler regulations should be attended to. The former is dealt with in Section 10. "Every hoist or teagle, and every flywheel directly connected with the steam or water or other mechanical power, must be securely fenced. . . . All dangerous parts of the machinery and every part of the mill gearing, must either be securely fenced, or be in such position or of such construction as to be equally safe to every person employed or working in the factory as it would be if it were securely fenced. All fencing must be constantly maintained in an efficient state while the parts required to be fenced are in motion or use, except where they are under repair or under examination in connection with repair, or are necessarily exposed for the purpose of cleaning or lubricating or for altering the gearing or arrangements of the parts of the machine."

Fencing
Machinery.

Section 11 reads thus: "Every steam boiler used for generating steam in a factory or workshop, or in any place in which any of the provisions of the Act apply, must, whether separate or one of a range, have attached to it a proper safety valve, and a proper steam gauge and water gauge, to show the pressure of steam and the height of water in the boiler, and be examined thoroughly by a competent person at least once in every fourteen months."

Steam Boiler
Regulations.

Under this Act, in the case of a factory where more than forty persons are employed, provision must be made for means of escape in the case of fire, and should any dispute arise between the owner of such factory and the occupier as to the cost of alterations to premises in compliance with the Act, the case may be settled by an appeal to the county court (in Scotland, the sheriff court), the judge at

Escape in
Case of Fire.

which may make an order allocating the cost of the alterations "as appears to the court just and equitable under all the circumstances of the case". When a difference of opinion arises between the owner of a factory or workshop and the council with regard to means of escape in the case of fire, this difference may, on the application of either party, within one month after the time when the difference arises, be referred to arbitration, the finding of the arbiters to be binding on both parties.

For the purpose of safety Section 16 of the Act provides that "While any person employed in a factory or workshop is within the factory or workshop for the purpose of employment or meals, the doors of the factory or workshop, and of any room therein in which such person is, must not be locked or bolted or fastened in such a manner that they cannot be easily and immediately opened from the inside". It is also enacted that in any factory or workshop built after 1896 in which more persons than ten are employed the doors, except in the case of sliding doors, must be constructed so as to open outwards.

If an accident occurs in a factory or workshop which causes loss of life, or such bodily injury to a person employed as to prevent him on any one of the three working days next after the occurrence of the accident from being employed for five hours on his ordinary work, written notice must be sent to the inspector of the district. If the accident has been caused by "machinery moved by steam, water, or other mechanical power, or through a vat, pan, or other structure, filled with hot liquid or molten metal or other substance, or by explosion or by escape of gas, steam, or metal", notice must be sent to the certifying surgeon for the district. This notice must state the residence of the person killed or injured, and the place to which he has been removed. The certifying surgeon is then required to proceed "with the least possible delay" to the factory or workshop and make a full investigation as to the nature and cause of the death or injury caused by that accident, and to send a report to the inspector within the next twenty-four hours.

Inspectors of workshops and factories are as a rule very particular as to the display of notices and abstracts required by the Factory Act.

This is dealt with in Section 128. "There shall be affixed at the entrance of every factory and workshop (in which women or young persons are employed), and in such other parts thereof as an inspector for the time being directs, and be constantly kept so affixed in the prescribed form and in such position as to be easily read by the persons employed in the factory or workshop, (a) the prescribed abstract of the Act, (b) a notice of the name and address of the prescribed inspector, (c) a notice of the name and address of the certifying surgeon for the district, (d) a notice of the clock (if any) by which the period of employment and times for meals in the factory or workshop are regulated, (e) every notice and document required by the Act to be affixed to the factory or workshop." In addition to the display of notices

a register has to be kept showing, "(a) the children or young persons employed in the factory or workshop, (b) the limewashing of the factory or workshop, (c) every accident occurring in the factory or workshop of which notice is required to be sent to an inspector, (d) every special exemption of which the occupier of the factory or workshop avails himself, and (e) such other matters as may be prescribed". This register has at all reasonable times to be open to inspection by the certifying surgeon of the district.

Keeping a
General
Register.

When a new factory is about to be opened it is required of the occupier that he, "within one month after he begins to occupy a factory or workshop, serve on the inspector for the district a written notice containing the name of the factory or workshop, the place where it is situate, the address to which he desires his letters to be addressed, the nature of the work, the nature and amount of the moving power therein, and the name of the person or firm under which the business of the factory or workshop is to be carried on". It is the duty of the inspector after receiving this notice to advise the district council of the district in which the workshop is situate.

Reporting Open-
ing of a Factory
or Workshop.

There are special regulations for the employment of youths over sixteen and under eighteen in bakehouses (Sec. 38): "1. In the part of a bakehouse in which the process of baking bread is carried on, the period of employment for any male young person above the age of sixteen years may be between five o'clock in the morning and nine o'clock in the evening, if he is employed in accordance with the following conditions, namely: (a) Where he is employed on any day before the beginning or after the end of the ordinary period of employment, there must be allowed him for meals and absence from work between the above-mentioned hours of five in the morning and nine in the evening not less than seven hours; (b) where he is employed on any day before the beginning of the ordinary period of employment, he must not be employed on the same day after the end of that period; (c) where he is employed on any day after the end of the ordinary period of employment, he must not be employed next morning before the beginning of the ordinary period of employment. 2. For the purposes of this exception the ordinary period of employment means the period of employment for women or young persons under the age of sixteen years in the bakehouse, or, if none are employed, means such period as can under this Act be fixed for the employment of women and young persons under the age of sixteen years in the bakehouse, and notice of that period shall be affixed in the bakehouse."

Young Persons
in Bakehouses.

Sanitary and other regulations for bakehouses are dealt with in Sect. 97 thus: "(1) It shall not be lawful to let or suffer to be occupied or to occupy any room or place as a bakehouse, unless the following regulations are complied with: (a) a water closet, earth closet, privy, or ashpit must not be within or communicate directly with the bakehouse; (b) every system for supplying water to

Bakehouse
Sanitary
Regulations.

the bakehouse must be separate and distinct from any eistern for supplying water to a water closet; (c) a drain or pipe for earrying off faecal or sewage matter must not have an opening within the bakehouse". Section 98 provides: "Where a court of summary jurisdiction is satisfied, on the prosecution of an inspeector or a district council, that any room or place used as a bakehouse is in such a state as to be on sanitary grounds unfit for use or occupation as a bakchouse, the oocupier of the bakehouse shall be liable to a fine not exceeding, for the first offence, forty shillings, and for any subsequent offence £5". But if the oocupier persists in refusing or neglects to make the alterations required by the court, the amount of the fine may be raised to £1 per day as long as the non-compliance continues.

Section 99 enacts thus: "All the inside walls of the rooms of a bakehouse, and all the ceilings or tops of those rooms (whether those walls, Painting and
Limewashing. ceilings, or tops are plastered or not), and all the passages and staireases of a bakehouse, must either be painted with oil or varnished or be limewashed, or be partly painted or varnished and partly limewashed. (a) Where the bakehouse is painted with oil or varnished, there must be three coats of paint or varnish, and the paint or varnish must be renewed once at least in every seven years, and must be washed with hot water and soap once at least in every six months; (b) where the bakehouse is limewashed, the limewashing must be renewed once at least in every six months."

Section 100 enacts that (1) "A place on the same level with a bakehouse, and forming part of the same building, may not be used as a Sleeping Rooms
near Bakehouse. sleeping place unless it is constructed as follows: (a) is effectually separated from the bakehouse by a partition extending from the floor to the ceiling; (b) has an external glazed window of at least nine superficial feet in area, of which at least four and a half superficial feet are made to open for ventilation".

Section 101 deals with underground bakeries. "(1) An underground bakehouse shall not be used as a bakehouse unless it was so used at the Underground
Bakehouses. passing of this Act (1901). (2) Subject to the foregoing provision, after Jan. 1st, 1904, an underground bakehouse shall not be used unless certified by the district council to be suitable for that purpose. (3) An underground bakehouse shall mean a bakehouse, any baking room of which is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room. The expression 'baking room' means any room used for baking, or for any process incidental thereto. (4) An underground bakehouse shall not be certified as suitable unless the district council is satisfied that it is suitable as regards construction, light, ventilation, and in all other respects. . . . (7) In the event of a refusal of a certificate by the district council, the occupier of the bakehouse may, within twenty-one days from the refusal, by complaint apply to a court of summary jurisdiction, and if it appears to the satisfaction of the court that the bakchouse is suitable for use as regards construction, light,

ventilation, and in all other respects, the court shall grant a certificate of suitability of the bakehouse, which shall have effect as if granted by the district council. (8) Where any place has been let as a bakehouse, and the certificate required by this section cannot be obtained unless structural alterations are made, and the occupier alleges that the whole or part of the expenses of the alterations ought to be borne by the owner, he may by complaint apply to a court of summary jurisdiction, and that court may make such order concerning the expenses or their apportionment as appears to the court to be just and equitable under the circumstances of the case, regard being had to the terms of any contract between the parties, or in the alternative the court may, at the request of the occupier, determine the lease.

Section 102 reads: "As respects every retail bakehouse, the provisions of this part of the Act shall be enforced by the district council of the district in which the retail bakehouse is situate, and not by Retail
Bakehouses. an inspector; and for the purposes of this section the medical officer of health of the district council shall have and may exercise all the powers of entry, inspection, taking legal proceedings, and otherwise of an inspector. In this section the expression 'retail bakehouse' means any bakehouse or place, not being a factory, the bread, biscuits, or confectionery baked in which are sold not wholesale, but by retail, in some shop or place occupied with the bakehouse." In these sections relating specially to bakehouses, "district council" must be interpreted in Scotland as the local authority under the Public Health Act of 1897.

The above summary of the general provisions of the Factory Act to which occupiers of bakeries must conform, as well as the provisions specially designed to apply to bakeries, will be of assistance to those about to open a bakery, or to others who may be unaware of the regulations, and either lay themselves open to prosecution by an inspector or be harassed by exacting regulations made by district councils or inspectors that have no sanction in the Act. The trade has now ceased to consider the requirements of the Factory or Public Health Acts galling, and the rule rather is, in the matter of cleanliness, construction, ventilation, and the regulation of junior labour, to be far in advance of the requirements of the law. The provision of the Act which prevents youths under eighteen from starting work until after 5 a.m. has made a great many masters refuse to employ boy labour at all, and one of the effects has been to prevent as thorough a training of operative bakers as in the time when they went from early youth through a long apprenticeship.

CHAPTER LXIX

THE WORKMEN'S COMPENSATION ACT

What may be considered a continuation of the Factory Act, but almost overshadowing it in importance so far as both employers and workmen are concerned, is the "Workmen's Compensation Act, 1906". This Act came into operation on 1st July, 1907. It repealed all previous Workmen's Compensation Acts, and its scope is immensely broadened as compared with these, so that everyone who is employed for wages or salary, totaling less than £250 a year, or in the case of a man employed at manual labour for a remuneration above this amount, the employer is liable for

Scope of the Act. compensation. The Act for the first time brings domestic servants within its scope. Compensation is to be paid to workmen for personal injury by accident "arising out of and in the course of the employment". This condition is one that readily lends itself to dispute as to what is and what is not "in the course of employment". A case was recently brought into court in which a servant engaged in sewing on her own behalf, but with the sanction of her employer, was injured in the eye by a bird which had flown in at the window, and which she had endeavoured to catch or chase out again. This was decided by the court as an injury not received in the course of her employment. The reasonable rendering of the stipulation is that the servant must be doing something directly connected with the employer's business or incidental to it specially.

Extent of Liability. The conditions governing the payment of compensation are set out in Section 1 as follows:—

"The employer shall not be liable under this Act in respect of any injury which does not disable the workman for a period of at least one week from earning full wages at the work at which he was employed.

"When the injury was caused by the personal negligence or wilful act of the employer or of some person for whose act or default the employer is responsible, nothing in this Act shall affect any civil liability of the employer, but in that case the workman may at his option either claim compensation under this Act or take proceedings independently of this Act; but the employer shall not be liable to pay compensation for injury to a workman by accident . . . both independently of and also under this Act, and shall not be liable to any proceedings independently of this Act, except in the case of such personal negligence or wilful act as aforesaid:

"If it is proved that the injury to a workman is attributable to the serious and wilful misconduct of that workman, any compensation claimed in respect of that injury shall, unless the injury results in death or serious and permanent disablement, be disallowed."

The all-embracing nature of the provisions of the Act is seen in the last subsection quoted, according to which even if a man's death or permanent

disablement while engaged in his employment is due to his own serious and wilful misconduct, the employer is nevertheless liable.

The scale of compensation, which is the serious part of the Act from the employer's point of view, is given in the first schedule attached to the Act.

Amount of
Compensation.

"The amount of compensation under this Act shall be

"(a) where death results from the injury—

"(i) if the workman leaves any dependants wholly dependent upon his earnings, a sum equal to his earnings in the employment of the same employer during the three years next preceding the injury, or the sum of one hundred and fifty pounds, whichever of these sums is the larger, but not exceeding in any case three hundred pounds, provided that the amount of any weekly payments made under this Act, and any lump sum paid in redemption thereof, shall be deducted from such sum, and, if the period of the workman's employment by the said employer has been less than the said three years, then the amount of his earnings during the said three years shall be deemed to be one hundred and fifty-six times his average weekly earnings during the period of his actual employment under the said employer;

"(ii) if the workman does not leave any such dependants, but leaves any dependants in part dependent upon his earnings, such sum, not exceeding in any case the amount payable under the foregoing provisions, as may be agreed upon, or, in default of agreement, may be determined, on arbitration under this Act, to be reasonable and proportionate to the injury to the said dependants; and

"(iii) if he leaves no dependants, the reasonable expenses of his medical attendance and burial, not exceeding ten pounds;

"(b) where total or partial incapacity for work results from the injury, a weekly payment during the incapacity not exceeding fifty per cent of his average weekly earnings during the previous twelve months, if he has been so long employed, but if not then for any less period during which he has been in the employment of the same employer, such weekly payment not to exceed one pound."

"If the incapacity lasts less than two weeks no compensation shall be payable in respect of the first week; and as respects the weekly payments during total incapacity of a workman who is under twenty-one years of age at the date of the injury, and whose average weekly earnings are less than twenty shillings, one hundred per cent shall be substituted for fifty per cent of his average weekly earnings, but the weekly payment shall in no case exceed ten shillings."

If a man when partially disabled is able to earn wages, the amount of such wages is taken into account when the compensation for the accident causing partial disablement is settled. When a workman meets with an accident he must, if required, submit to medical examination as to the extent of the injury. A claim for compensation may be met by paying the amount into court pending a

Various Provisions.

settlement by the court, by agreement, or by arbitration. The question as to who is a dependant is to be settled by arbitration. If a workman refuses to be medically examined, his right to compensation may be suspended. When a weekly payment has been made to an injured workman for six months the employer may apply to have the weekly payments altered to a lump sum. If a workman leaves the United Kingdom he ceases to be entitled to compensation for injury unless proof is provided that the injury is permanent. "A weekly payment, or a sum paid by way of redemption thereof, shall not be capable of being assigned, charged, or attached, and shall not pass to any other person by operation of law, nor shall any claim be set off against the same."

Disputes under the Act may be settled by arbitration of a committee representing employer and workmen, or if for any reason such a committee fails to settle the matter within six months it may then be settled by a single arbiter agreed to by both parties, or failing that by a County Court judge. In Scotland a dispute may be settled summarily in the Sheriff Court, and, unless on points of law, cannot be carried to the Court of Session. Should the parties or either of them disagree on the finding of the latter court, the appeal may be made to the House of Lords. In the case of Ireland the court for the settlement of cases may be that of the recorder of any city or town, with a reference in the case of disagreement to the Court of Appeal, then to the House of Lords.

In this Act, as in many others, the utmost importance attaches to the "definitions". Thus "'Employer' includes any body of persons corporate or unincorporate and the legal personal representative of a deceased employer, and, where the services of a workman are temporarily lent or let on hire to another person by the person with whom the workman has entered into a contract of service or apprenticeship, the latter shall, for the purposes of this Act, be deemed to continue to be the employer of the workman whilst he is working for that other person". This definition seems to dispose of the fear which was expressed at the time of the passing of this Act that on account of the baker paying "pitch money" to millers' earman, the latter might be considered as in the employ of the baker for the time being, and that in the event of an injury happening to the earman whilst carrying flour the baker might be liable for damages. The service of the earman with the miller is evidently continuous, and the miller does not at any time cease to be the employer. But in any case if the baker should give a miller's earman anything for carrying flour, it should be understood as strictly a gratuity and in no sense payment for services.

This is the definition given of a workman:—" 'Workman' does not include any person employed otherwise than by way of manual labour whose remuneration exceeds two hundred and fifty pounds a year; or a person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's

trade or business, . . . or an outworker or a member of the employer's family dwelling in his house, but, save as aforesaid, means any person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise, and whether the contract is expressed or implied, is oral or in writing."

The definition of dependants is as follows. "'Dependants' means such of the members of the workman's family as were wholly or in part dependent upon the earnings of the workman at the time of his death, or would but for the incapacity due to the accident have been so dependent, and where the workman, being the parent or grandparent of an illegitimate child, leaves such a child so dependent upon his earnings, or, being an illegitimate child, leaves a parent or grandparent so dependent upon his earnings, shall include such an illegitimate child and parent or grandparent respectively. 'Member of a family' means wife or husband, father, mother, grandfather, grandmother, stepfather, stepmother, son, daughter, grandson, granddaughter, stepson, stepdaughter, brother, sister, half brother, half sister."

The provisions of this Act are so far-reaching and the liabilities of even a small employer of labour so great, that but for the possibility of insurance against accidents coming under the Act the employer would be in constant danger of being ruined financially by accidents which he could neither guard against nor foresee. Fortunately the insurance companies have risen to the occasion, and their actuaries have estimated the risk carefully, while the competition amongst them has resulted in rates of premium so low that no employer, even if only of a domestic servant, should hesitate about taking out a policy of insurance to cover his risk under the Act, taking care, however, that the policy obtained properly covers the risks intended. Care should be taken that the policy makes allowance for engagement of extra labour with or without notice to the insuring company, and also allows for change of workmen or servants.

CHAPTER LXX

MISCELLANEOUS ACTS

The Employment of Children Act, 1903, is of some importance to the baking and confectionery trades, not so much because the trade habitually employs children, but because at certain busy seasons of the year, such as Christmas, Good Friday, &c., youths under sixteen years of age—who come within the definition of children under the Act—are anxious to be allowed to work in a bakery in prohibited hours, and in certain light operations their services are helpful to the men, who on that account do not stop them from working. On the other hand, it is

a not uncommon practice with inspectors to watch bakeries and make raids at those special times, in the hope of securing convictions against employers, although well aware that the youths are not employed regularly or to an extent to do them any injury. The Act provides that a youth under fourteen years of age shall not be employed between nine in the evening and six in the morning unless under a local by-law, which may vary the hours for some specific occupations. A child is not to be employed to "lift, carry, or move anything so heavy as to be likely to cause injury to the child". A child is not to be employed in any occupation likely to be injurious to his life, limb, health, or education, regard being had to his physical condition. That an employer may know as to the condition of the youth, a letter from the local authority signed by a medical practitioner stating that the kind of occupation the youth is employed at is likely to be injurious, &c., is admissible as evidence in any subsequent proceedings against the employer. If the youth is employed not by the master but by an agent or workman only, and if the employer has actually given instructions prohibiting the employment of the youth or youths and has exercised due diligence to see that his instructions were attended to, then the agent or workman who actually allowed the employment can be sued by the inspector, instead of the employer. For obstructing an inspector in the discharge of his duty under this Act the penalty may be as high as twenty pounds.

The Truck Act, 1896, allows an employer to make certain regulations as to fines, but the regulations must be in the form of a specific contract, which must be contained in a notice kept fixed in such a position that it can always be seen and read; or the contract may be in writing signed by the workman. The contract must specify "the acts or omissions in respect of which the fine may be imposed, and the amount of the fine or the particulars from which that amount may be ascertained". The fine must be "in respect of some act or omission which causes or is likely to cause damage or loss to the employer, or interruption or hindrance to his business, and the amount of the fine must be fair and reasonable, having regard to all the circumstances of the case". No deductions can be made from wages unless under such a contract as described above, or unless particulars in writing are given to the workman showing the act or omission for which the fine or deduction is made, and the amount is to be supplied in this written statement on each occasion on which a deduction is made. Under the same set of conditions, but not otherwise, an employer is entitled to make a contract for deductions from wages, or fines for bad or negligent work, or injury to materials or other property of the employer. Under the same conditions also an arrangement may be made between an employer and workmen for deductions for the use of materials, machines, tools, standing room, light, heat, &c., but the amount charged in respect of these must not exceed the actual or estimated cost to the employer—must not, in fact, be more than a fair and reasonable rent or charge, having regard to all the circumstances of the case.

Any workman or shop assistant may recover from an employer any sum deducted contrary to the Act if proceedings are taken within six months; but where the workman has acquiesced in such deductions or payment, he can only recover the excess which has been deducted or paid over the amount, if any, which the court may find to have been fair and reasonable. A register of all deductions made in respect of contracts under this Act must be kept by the employer, and must be open for the inspection of the factory inspector.

Some years ago, when the proposal was made to make punishable the giving or receiving of secret commissions, it was considered that any Act for the purpose would be of great use in connection with the Prevention of the baking and catering businesses, and might free these **Corruption Act.** from some of the corrupt and secret bargains which were known to exist. Whilst the Prevention of Corruption Act, 1906, has made secret commission bargains still more secret than they had been before, and has caused greater caution in entering into such bargains, it can hardly be said to have been as effective in preventing the evil as was expected. This Act is very short. "If any agent corruptly accepts or obtains . . . from any person, for himself or for any other person, any gift or consideration as an inducement or reward for doing or forbearing to do . . . any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business"; or if any person gives or offers gifts for the same purpose, . . . or "if any person knowingly gives to any agent, or if any agent knowingly uses with intent to deceive his principal any receipt, account, or other document in respect of which the principal is interested, and which contains any statement which is false or erroneous or defective in any material particular, and which to his knowledge is intended to mislead the principal", then for such offence the maximum penalty is two years' imprisonment with or without hard labour, or a fine not exceeding five hundred pounds, or to both fine and imprisonment. The number of cases brought into court under the Act has been so small as to indicate that the Act has practically been a failure.

Bakers have not to any great extent taken advantage of the Shop Hours Act, 1904, under which, on an application to the local authority, the latter, being satisfied that two-thirds of those engaged in a particular trade in a locality desire the authority to **Shop Hours Act.** make a closing order respecting that trade, may make such an order. The hour fixed by a closing order may not be sooner than seven o'clock on any weekday, nor earlier than one o'clock on one day in the week. A closing order may prohibit, either absolutely or subject to such exemptions and conditions as may be contained in the order, the carrying on of any retail trade after the closing hour. The order may allow sales after the closing hour in cases of emergency, &c. Fairs and bazaars for charitable purposes are exempt from the application of closing orders, nor do they apply to any shop where the only trade carried on is post office, medicines, &c., sale by

retail of intoxicating liquors, &c., sale of refreshments for consumption on the premises, sale of tobacco, newspapers, &c.

When several trades are carried on in the same shop, and if one or more of these trades are those to which closing orders are locally applied, the shop can be kept open, but only on such terms and under such conditions as may be specified in the order. When a local authority makes a closing order with respect to any trade, this must be confirmed by the central authority, after which it has the force of an Act of Parliament. A closing order may be annulled by an Order in Council. If at any time the local authority is petitioned by a majority of any class of shops to which the closing order applies to amend or discontinue the order, the local authority may apply to the central authority, which may revoke the closing order either absolutely or as far as it affects any particular class of shop.

Bakers' shops are under the same regulations with regard to employes as shops in general, and as females are mostly employed they come under

the regulations of the Seats for Shop Assistants Act. In Shop Assistants. the Shop Hours Act it is stipulated that no "young person—a person under eighteen years of age—is allowed to be employed in or about a shop for more than seventy-four hours in a week, meal-times included". An abstract of the Act must be exhibited in a conspicuous part of the shop. The Seats Act says that in all rooms of a shop or other premises where goods are actually retailed to the public, and where female assistants are employed for this retailing, the employer carrying on business in such premises must provide seats behind the counter, or in such other position as may be suitable for the purpose; and such seats must be in the proportion of not less than one seat to every three female assistants employed in each room.

The Sale of Food and Drugs Acts, 1875 to 1899, are not of very great importance to the baker and confectioner, except to those who sell the Sale of Food manufactures of others in packets or bulk. The essence and Drugs Acts. of the Acts is in the declarations that no person shall sell an article of food or a drug mixed with any ingredient injurious to health or intended fraudulently to increase its bulk, weight, or measure, or conceal its inferior quality, but substances with none of these effects may be mixed if at the time of sale a notice is given to the purchaser by a label distinctly and legibly written or printed on or with the article to the effect that the same is mixed. No one is allowed to sell any food from which anything has been abstracted to injure its quality or nature without making disclosure of the alteration. For using a label falsely describing an article the penalty may be £20.

The Merchandise Marks Acts, 1887 and 1891, may be of importance to bakers and confectioners. To forge any trade mark; to falsely apply to Merchandise any goods any trade mark or mark resembling such as to be Marks Acts. calculated to deceive; to make any die, block, or machine for forging a trade mark; and to apply any false description to goods are offences under the Act. To sell or expose for sale anything with a false

trade description is an offence, unless the seller has taken all reasonable precautions against committing the offence and had no reason to suspect the genuineness of the trade mark. It is a mitigation of an offence committed unknowingly if the seller gives to the prosecutor all information in his power with respect to the person from whom he obtained the goods complained of.

There are many other Acts of Parliament that indirectly affect the trade, but not intimately enough to warrant special notice.

CHAPTER LXXI

THE BREAD LAWS

The Bread Acts are frequently referred to as obsolete, yet their spirit still regulates the manner in which bread is made and sold. The Acts as now existing must be considered, not solely by themselves but in relation to all the Bread Acts that have gone before, The Bread Acts. and in relation also to the regulations regarding bread sale which obtain in other countries and in our own Colonies. As it is within possibility that, owing to agitation amongst bakers and amongst inspectors of weights and measures who have taken upon themselves to administer the Bread Acts, there may be an effort made within a few years to promote another Bread Bill, the important sections of the London Act still in force are given here. The general Act of 1836 applying to Scotland and England, and the Irish Act of 1838 are not given, as they are almost identical with the London Act of 1822; but a note is made of all the important differences.

The great and essential difference between the present Acts and those preceding consists in the provision in Section III allowing the baker to make his bread of any weight and size he thinks fit. Previously the weight of all loaves sold and their price had been fixed by the magistrate. The change was brought about by the difficulty the magistrates had, in raising the price of bread in accordance with the market price of flour, to be just to the bakers on the one hand and to the public on the other; for the smallest increase or decrease of price on a two-pound loaf could Mode of Selling. not be less than a farthing, and that was the equivalent at that time of about 3s. 8d. on a sack of flour. But the price of flour was varying by amounts much less or more than this, and in any case seldom by 3s. 8d. or exact multiples of that sum, and so the bakers were constantly harassed by prices fixed too low by the magistrates. The evident purpose of the liberty allowed in the present Acts was to give the baker power to vary the weight of his loaves to meet small changes in the price of flour, while the interests of the public were to be conserved by the stipulation that all bread must be sold by weight and not otherwise. The trade is now divided into two opposing camps: one holding to the idea of the older

Bread Acts that the weight of all loaves should be definitely fixed; the other that full advantage should be taken of the liberty allowed by the Acts as now in force. The provisions in the Act of 1836 as applied to Scotland are not actually in force in those cities or towns where the corporations have power to make special provisions and regulations for the sale of bread or other articles.

THE LONDON BREAD ACT, 1822

An Act to repeal the Acts now in force relating to Bread to be sold in the City of *London* and the Liberties thereof, and within the Weekly Bills of Mortality, and Ten Miles of the *Royal Exchange*; and to provide other Regulations for the Making and Sale of Bread, and preventing the Adulteration of Meal, Flour, and Bread, within the Limits aforesaid.

WHEREAS an Act was passed in the Fifty-fifth Year of the Reign of His late Majesty King *George* the Third, intituled *An Act to repeal the Acts now in force relating to Bread to be sold in the City of London and Liberties thereof, and within the Weekly Bills of Mortality, and Ten Miles of the Royal Exchange, and to prevent the Adulteration of Meal, Flour, and Bread, and to regulate the Weights of Bread within the same Limits*: And whereas an Act was passed in the Fifty-ninth Year of the Reign of His said late Majesty King *George* the Third, intituled *An Act to alter and amend an Act made in the Fifty-fifth Year of the Reign of His present Majesty, intituled 'An Act to repeal the Acts now in force relating to Bread to be sold in the City of London and the Liberties thereof, and within the Weekly Bills of Mortality and Ten Miles of the Royal Exchange, and to prevent the Adulteration of Meal, Flour, and Bread, and to regulate the Weights of Bread within the same limits;*' which said last-mentioned Act was, by another Act passed in the Sixtieth Year of His said late Majesty King *George* the Third, continued until the Twenty-fourth Day of *June* One thousand eight hundred and twenty: And whereas another Act was passed in the First Year of the Reign of His present Majesty, intituled *An Act to continue until the Twenty-fourth Day of June One thousand eight hundred and twenty-two, Two Acts of the Fifty-ninth and Sixtieth Years of His late Majesty, for regulating the Weight and Sale of Bread*: And whereas it is expedient that the said recited Acts of the Fifty-ninth and Sixtieth Years of the Reign of His said late Majesty, and of the First Year of the Reign of His present Majesty, should be continued until the Twenty-ninth Day of *September* next; and that from and after the said Twenty-ninth Day of *September* next, the said recited Act of the Fifty-fifth Year of the Reign of His said late Majesty, and the several Provisions therein contained, (except so much thereof as repeals any former Act or Acts) shall be altogether repealed; and that in lieu of the several Provisions and Penalties contained in that Act, and in the said recited Act of the Fifty-ninth Year of the Reign of His said late Majesty, the Regulations, Provisions, and Penalties hereinafter contained shall be substituted: But inasmuch as the Purposes aforesaid cannot be effected without the Aid and Authority of Parliament: May it therefore please Your Majesty that it may be enacted; and be it enacted by the King's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That the said recited Acts of the Fifty-ninth and Sixtieth Years of the Reign of His said late Majesty, and of the First Year of the Reign of his present Majesty, and the several Clauses and Provisions therein contained, shall be and the same are hereby con-

tinued, and shall remain and continue in force until the said Twenty-ninth Day of *September* next; and that from and after the said Twenty-ninth Day of *September*, the said recited Act of the Fifty-fifth Year of the Reign of His said late Majesty, and all and every the Provisions therein contained, (except so much thereof as repeals any former Act or Acts) shall be and the same are hereby repealed.

II. And be it further enacted, That it shall and may be lawful for the several Bakers or Sellers of Bread within the City of *London* and the Liberties thereof, within the Weekly Bills of Mortality, and within Ten Miles of the *Royal Exchange*, to make and sell, or offer for Sale, in his, her, or their Shop, or to deliver to his, her, or their Customer or Customers, Bread made of Flour, or Meal of Wheat, Barley, Rye, Oats, Buck Wheat, Indian Corn, Peas, Beans, Rice, or Potatoes, or any of them, and with any common Salt, pure Water, Eggs, Milk, Barm, Leaven, Potatoe, or other Yeast, and mixed in such Proportions as they shall think fit, and with no other Ingredient or Matter whatsoever, subject to the Regulations herein contained.

Bread made of the Articles herein mentioned may be sold.

III. And be it further enacted, That it shall and may be lawful for the several Bakers or Sellers of Bread within the Limits aforesaid, to make and sell, or offer for Sale, in his, her, or their Shop, or to deliver to his, her, or their Customer or Customers, Bread made of such Weight or Size as such Bakers or Sellers of Bread shall think fit; any Law or Usage to the contrary notwithstanding.

Bakers to make Bread of any Weight or Size.

IV. And be it further enacted, That from and after the Commencement of this Act, all Bread sold within the Limits aforesaid, shall be sold by the several Bakers or Sellers of Bread respectively within the said Limits by Weight; and in case any Baker or Seller of Bread within the Limits aforesaid shall sell, or cause to be sold, Bread in any other Manner than by Weight, then and in such Case every such Baker or Seller of Bread shall, for every such Offence, forfeit and pay any Sum not exceeding Forty Shillings, which the Magistrate or Magistrates, Justice or Justices, before whom such Offender or Offenders shall be convicted, shall order and direct: Provided always, that nothing in this Act contained shall extend or be construed to extend to prevent or hinder any such Baker or Seller of Bread from selling Bread usually sold under the Denomination of French or Fancy Bread, or Rolls, without previously weighing the same.

Bread to be sold by Weight, and in no other Manner.

Not to extend to French or Fancy Bread, or Rolls.

V. And be it further enacted, That the several Bakers or Sellers of Bread respectively within the said Limits, in the Sale of Bread shall use the Avoirdupoise Weight of Sixteen Ounces to the Pound, according to the Standard in the Exchequer, and the several Gradations of the same for any less Quantity than a Pound; and in case any such Baker or Seller of Bread shall at any Time use any other than the Avoirdupoise Weight, and the several Gradations of the same, he, she, or they shall, for every such Offence, forfeit and pay any Sum not exceeding Five Pounds nor less than Forty Shillings, as the Magistrate or Magistrates, Justice or Justices, before whom such Conviction shall take place, shall from Time to Time order and adjudge.

Penalty on Bakers using any other Weight than Avoirdupoise Weight.

VII. And be it further enacted, That in case any such Baker or Seller of Bread shall at any Time before the Expiration of Two Years from the Commencement of this Act, sell or deliver in his, her, or their Shop, House, or Premises, any Bread which shall not have been previously weighed in the Presence of the Party purchasing the same, whether required by the Purchaser so to do or not, except as aforesaid, then and in every such Case every such Baker or Seller of Bread so offending, shall, upon Conviction in Manner

Penalty for selling Bread not previously weighed.

herein-after mentioned, forfeit and pay for every such Offence, any Sum not exceeding the Sum of Ten Shillings, as the Magistrate or Magistrates, Justice or Justices, before whom such Conviction shall take place, shall from Time to Time order and adjudge.

Bakers to provide in their Shops Beams, Scales, and Weights, &c., and to weigh Bread, &c.

VIII. And be it further enacted, That every Baker or Seller of Bread within the Limits aforesaid, shall cause to be fixed in some conspicuous Part of his, her, or their Shop, on or near the Counter, a Beam and Scales with proper Weights, or other sufficient Balance, in order that all Bread there sold may from Time to Time be weighed in the Presence of the Purchaser or Purchasers thereof, except as aforesaid; and in Case any such Baker or Seller of Bread shall neglect to fix such Beam and Scales, or other sufficient Balance, in manner aforesaid, or to provide and keep for use proper Beam and Scales and proper Weights or Balance, or shall have or use any incorrect or false Beam or Scales or Balance, or any false Weight not being of the Weight it purports to be, according to the Standard in the Exchequer, then and in every such Case, he, she, or they shall, for every such false Beam and Scales and Balance, or false Weight, forfeit and pay any Sum not exceeding Five Pounds, which the Magistrate or Magistrates, Justice or Justices, before whom such Offender or Offenders shall be convicted, shall order and direct.

Bakers and Sellers of Bread, and other Persons delivering by Cart, &c., to be provided with Beams, Scales, and Weights, &c., for weighing Bread.

IX. And be it further enacted, That every Baker or Seller of Bread within the Limits aforesaid, and every Journeyman, Servant, or other Person employed by such Baker or Seller of Bread, who shall convey or carry out Bread for Sale in any Cart or other Carriage, drawn by a Horse, Mule, or Ass, shall be provided with, and shall constantly carry in such Cart or other Carriage, a correct Beam and Scales with proper Weights, or other sufficient Balance, in order that all Bread sold by every such Baker or Seller of Bread, or by his or her Journeyman, Servant, or other Person, may from Time to Time be weighed in the Presence of the Purchaser or Purchasers thereof, except as aforesaid; and in case any such Baker or Seller of Bread, or his or her Journeyman, Servant, or other Person, shall at any Time carry out or deliver any Bread, without being provided with such Beam and Scales with proper Weights, or other sufficient Balance, or whose Weights shall be deficient in their due Weight according to the Standard in the Exchequer, or shall at any Time refuse to weigh any Bread purchased of him, her, or them, or delivered by his, her, or their Journeyman, Servant, or other Person, in the Presence of the Person or Persons purchasing or receiving the same; then and in every such Case every such Baker or Seller of Bread shall, for every such Offence, forfeit and pay any Sum not exceeding Five Pounds, which the Magistrate or Magistrates, Justice or Justices, before whom such Offender or Offenders shall be convicted, shall order and direct.

Bread not to be adulterated.

X. And be it further enacted, That no Baker or other Person or Persons who shall make Bread for Sale within the Limits aforesaid, nor any Journeyman or other Servant of any such Baker or other Person, shall at any Time or Times, in the making of Bread for Sale within such Limits, use any Mixture or Ingredient whatsoever in the Making of such Bread, other than and except as herein-before mentioned, on any Account or under any Colour or Pretence whatsoever, upon Pain that every such Person, whether Master or Journeyman, Servant or other Person, who shall offend in the Premises, and shall be convicted of any such Offence, by the Oath, or in case of a Quaker, by Affirmation, of One or more credible Witness or Witnesses, or by his, her, or their own Confession, shall for every such Offence forfeit and pay any Sum not exceeding Ten Pounds nor less than Five Pounds, or in Default thereof shall, by Warrant under the Hand and Seal or Hands and Seals of

SOME IRISH BAKERS

HENRY O'SHEA, born in 1858 in the county of Cork, served his time at baking in Kanturk, and afterwards went to New York. Returning to Ireland, he started his present successful business in the city of Cork in 1889. In 1902 he opened the Tivoli Restaurant. He has several times catered for royal visitors to the city. Mr. O'Shea was High Sheriff of the City of Cork in 1901, and is at present an Alderman. Agriculture is his hobby.

JOHN BREWSTER, a native of Derry county, founded his present bakery in the city of Londonderry in 1872. It was converted into a limited liability business in 1897, and is in a highly flourishing condition. Mr. Brewster has been a member of the Londonderry City Corporation since 1892, and in 1895 was made a Justice of the Peace for County Donegal. He was High Sheriff of the County and City of Londonderry in 1907-1908, and has also filled other local offices of honour and trust. Yachting is his favourite recreation.

THOMAS P. WILLIS started "The Modern Bakery" in Newry in 1884, and has now a turnover of over 500 sacks per week. He has been a Town Commissioner and Urban Councillor for Newry for many years, and has initiated many important town improvements. He takes an active interest in the Irish Association of Master Bakers, and is a judge for the Irish Section at the London Bakery Exhibition. He is an experienced horse-breeder.

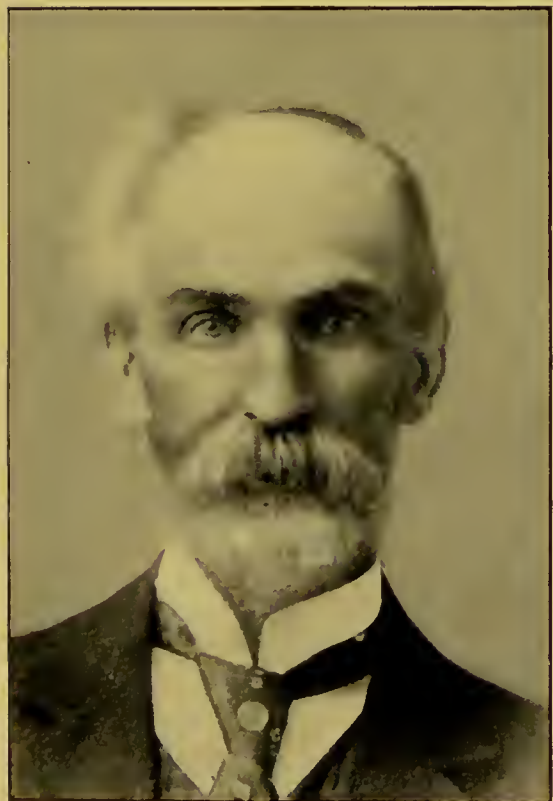
SIR JOSEPH DOWNES is head of a prosperous bakery establishment in Dublin, which he founded at the age of twenty-five. It now includes a confectionery, tea and coffee department. Sir Joseph has been a member of the municipal council since 1892, and was made a Justice of the Peace in 1894. In 1899 he was elected to the office of High Sheriff of the City of Dublin, and in 1900 he was knighted on the occasion of Queen Victoria's visit to the city. He is a director of the Hibernian Insurance Company, and governor of several charitable institutions. He is an active member of the Irish Association of Master Bakers.



HENRY O'SHEA
(Cork)



Photo. JOHN BREWSTER, J.P. *Elliott & Fry.*
(Londonderry)



THOMAS P. WILLIS
(Newry)



SIR JOSEPH DOWNES, J.P.
(Dublin)

SOME IRISH BAKERS

the Magistrate or Magistrates, Justice or Justices, before whom such Offender shall be convicted, be apprehended and committed to the House of Correction, or some Prison of the City, County, Borough, or Place where the Offence shall have been committed or the Offender or Offenders shall be apprehended, there to remain for any Time not exceeding Six Calendar Months from the Time of such Commitment, unless the Penalty shall be sooner paid, as any such Magistrate or Magistrates, Justice or Justices, shall think fit and order; and it shall be lawful for the Magistrate or Magistrates, Justice or Justices, before whom any such Offender or Offenders shall be convicted, to cause the Offender's Name, Place of Abode, and Offence, to be published in some Newspaper which shall be printed or published in or near the City of *London* or the Liberty of *Westminster*, and to defray the Expense of publishing the same out of the Money to be forfeited as last mentioned, in case any shall be so forfeited, paid, or recovered.

Names of
Offenders to
be published.

XI. And be it further enacted, That if any Person within the Limits aforesaid, shall put into any Corn, Meal, or Flour, which shall be ground, dressed, bolted, or manufactured for Sale within such Limits, either at the Time of grinding, dressing, bolting, or manufacturing the same, or at any other Time, any Ingredient or Mixture whatsoever, not being the real and genuine Produce of the Corn or Grain which shall be so ground; or if any Person shall, within the Limits aforesaid, knowingly sell, or offer or expose for Sale, either separately or mixed, any Meal or Flour of one Sort of Corn or Grain, as the Meal or Flour of any other Sort of Corn or Grain, or any Ingredient whatsoever mixed with the Meal or Flour so sold or offered or exposed for Sale; then and in every such Case every Person so offending shall, upon Conviction before any one or more Magistrate or Magistrates, Justice or Justices of the City, County, Borough, or Place where such Offence shall have been committed, on the Oath, or in case of a Quaker, by Affirmation, of One or more credible Witness or Witnesses, or by his, her, or their own Confession, forfeit and pay for every such Offence, any Sum not exceeding Twenty Pounds nor less than Five Pounds, which such Magistrate or Magistrates, Justice or Justices, before whom any such Offender or Offenders shall be convicted, shall think fit and order.

Corn, Meal,
or Flour not
to be adulter-
ated, nor
shall any
Flour of one
Sort of Corn
be sold as the
Flour of any
other Sort.

XII. And be it further enacted, That every Person who shall make for Sale, or sell or expose for Sale, within the Limits aforesaid, any Bread, made wholly or partially of the Meal or Flour of any other Sort of Corn or Grain than Wheat, or of the Meal or Flour of any Peas or Beans, shall cause all such Bread to be marked with a large Roman M; and if any Person shall at any Time, within the Limits aforesaid, make or sell, or expose for Sale, any such Bread without such Mark as herein-before directed, then and in every such Case, every Person so offending shall, upon Conviction in Manner herein-after mentioned, forfeit and pay for every Pound Weight of such Bread, and so in Proportion for any less Quantity, which shall be so made for Sale or sold or exposed for Sale, without being so marked as aforesaid, any Sum not exceeding Ten Shillings, as the Magistrate or Magistrates, Justice or Justices, before whom such Conviction shall take place, shall from Time to Time order and adjudge.

Bread made
of mixed Meal
or Flour to be
marked with a
Roman M.

XIII. And be it further enacted, That it shall be lawful for any Magistrate or Magistrates, Justice or Justices of the Peace, within the Limits of their respective Jurisdictions, and also for any Peace Officer or Officers, authorized by Warrant under the Hand and Seal or Hands and Seals of any such Magistrate or Magistrates, Justice or Justices (and which Warrant any such Magistrate or Magistrates, Justice or Justices, is and are hereby

Magistrates
or Peace
Officers, by
their War-
rants, may
search a
Baker's Pre-

mises, and if any adulterated Flour, Bread, &c., be found, the same may be seized and disposed of.

empowered to grant), at seasonable Times in the Day-time, to enter into any House, Mill, Shop, Stall, Bakehouse, Bolting House, Pastry Warehouse, Out-house or Ground of or belonging to any Miller, Mealman, or Baker, or other Person who shall grind Grain, or dress or bolt Meal or Flour, or make Bread for Reward or Sale, within the Limits aforesaid, and to search or examine whether any Mixture or Ingredient not the genuine Produce of the Grain such Meal or Flour shall import or ought to be, shall have been mixed up with or put into any Meal or Flour in the Possession of such Miller, Mealman, or Baker, either in the grinding of any Grain at the Mill, or in the dressing, bolting, or manufacturing thereof, whereby the Purity of any Meal or Flour is or shall be in anywise adulterated; or whether any Mixture or Ingredient, other than is allowed by this Act, shall have been mixed up with or put into any Dough or Bread in the Possession of any such Baker or other Person, whereby any such Dough or Bread is or shall be in anywise adulterated; and also to search for any Mixture or Ingredient which may be intended to be used in or for any such Adulteration or Mixture; and if on any such Search, it shall appear that any such Meal, Flour, Dough, or Bread, so found, shall have been so adulterated by the Person in whose Possession it shall then be, or any Mixture or Ingredient shall be found, which shall seem to have been deposited there in order to be used in the Adulteration of Meal, Flour, or Bread; then and in every such Case, it shall be lawful for every such Magistrate or Magistrates, Justice or Justices of the Peace, or Officer or Officers authorized as aforesaid respectively, within the Limits of their respective Jurisdictions, to seize and take any Meal, Flour, Dough, or Bread which shall be found in any such Search, and deemed to have been adulterated, and all Ingredients and Mixtures which shall be found and deemed to have been used or intended to be used in or for any such Adulteration as aforesaid; and such part thereof as shall be seized by any Peace Officer or Officers authorized as aforesaid, shall, with all convenient Speed after Seizure, be carried to the nearest resident Magistrate or Magistrates, Justice or Justices of the Peace, within the Limits of whose Jurisdiction the same shall have been so seized; and if any Magistrate or Magistrates, Justice or Justices, who shall make any such Seizure in pursuance of this Act, or to whom anything so seized under the Authority of this Act shall be brought, shall adjudge that any such Meal, Flour, Dough, or Bread so seized shall have been adulterated by any Mixture or Ingredient put therein, other than is allowed by this Act, or shall adjudge that any Ingredient or Mixture so found as aforesaid shall have been deposited or kept where so found for the Purpose of adulterating Meal, Flour, or Bread; then and in any such Case, every such Magistrate or Magistrates, Justice or Justices of the Peace, is and are hereby required, within the Limits of their respective Jurisdictions, to dispose of the same as he or they, in his or their Discretion, shall from Time to Time think proper.

Penalty on Persons in whose House, Shop, or other Premises, Ingredients for the Adulteration of Meal or Bread shall be found.

XIV. And be it further enacted, That every Miller, Mealman, or Baker, within the Limits aforesaid, in whose House, Mill, Shop, Stall, Bakehouse, Bolting House, Pastry Warehouse, Out-house, Ground, or Possession, any Ingredient or Mixture shall be found, which shall, after due Examination, be adjudged by any Magistrate or Magistrates, Justice or Justices of the Peace, to have been deposited there for the Purpose of being used in adulterating Meal, Flour, or Bread, shall, on being convicted of any such Offence, either by his, her, or their own Confession, or by the Oath, or in the case of a Quaker, by Affirmation, of One or more credible Witness or Witnesses, forfeit and pay, on every such Conviction, any Sum of Money not exceeding Ten Pounds nor less than Forty Shillings for the First Offence; Five Pounds

for the Second Offence, and Ten Pounds for every subsequent Offence; or in default of Payment thereof, shall, by Warrant under the Hand and Seal or Hands and Seals of the Magistrate or Magistrates, Justice or Justices, before whom such Offender shall be convicted, be apprehended and committed to the House of Correction, or some Prison of the City, County, or Place where the Offence shall have been committed, or the Offender or Offenders shall be apprehended, there to remain for any Time not exceeding Six Calendar Months from the Time of such Commitment, (unless the Penalty be sooner paid) as any such Magistrate or Magistrates, Justice or Justices, shall think fit and order; and it shall be lawful for the Magistrate or Magistrates, Justice or Justices, before whom any such Offender shall be convicted, to cause the Offender's Name, Place of Abode, and Offence, to be published in some Newspaper which shall be printed or published in or near the City of *London*, and to defray the Expense of publishing the same out of the Money to be forfeited as last mentioned, in case any shall be so forfeited, paid, or recovered.

Names of
Offenders to
be published.

XV. And be it further enacted, That if any Person or Persons shall wilfully obstruct or hinder any such Search as herein-before is authorized to be made, or the Seizure of any Meal, Flour, Dough, or Bread or of any Ingredient or Mixture which shall be found on any such Search, and deemed to have been lodged with an Intent to adulterate the Purity or Wholesomeness of any Meal, Flour, Dough, or Bread, or shall wilfully oppose or resist any such Search being made, or the carrying away any such Ingredient or Mixture as aforesaid, or any Meal, Flour, Dough, or Bread, which shall be seized as being adulterated, or as not being made pursuant to this Act, he, she, or they so doing or offending in any of the Cases last aforesaid, shall for every such Offence, on being convicted thereof, forfeit and pay such Sum, not exceeding Ten Pounds, as the Magistrate or Magistrates, Justice or Justices, before whom such Offender or Offenders shall be convicted, shall think fit and order: Provided also, that if any Person making or who shall make Bread for Sale within the Limits aforesaid, shall at any Time make Complaint to any Magistrate or Magistrates, Justice or Justices of the Peace, within his or their Jurisdiction, and make appear to him or them, by the Oath, or in the case of a Quaker, by Affirmation, of any credible Witness, that any Offence which such Person shall have been charged with, and for which he or she shall have incurred and paid any Penalty under this Act, shall have been occasioned by or through the wilful Act, Neglect, or Default of any Journeyman or other Servant employed by or under such Person so making Complaint, then and in any such Case, any such Magistrate or Magistrates, Justice or Justices, may and is or are hereby required to issue out his or their Warrant, under his or their Hand and Seal, or respective Hands and Seals, for bringing any such Journeyman or Servant before any such Magistrate or Magistrates, Justice or Justices, or any Magistrate or Justice of the Peace acting in and for the City, County, Division, or Place where the Offender can be found, and on any such Journeyman or Servant being thereupon apprehended and brought before any such Magistrate or Magistrates, Justice or Justices, he or they, within his or their respective Jurisdiction, is and are hereby authorized and required to examine into the Matter of such Complaint, and on Proof thereof upon Oath or Affirmation to the Satisfaction of any such Magistrate or Magistrates, Justice or Justices of the Peace, who shall hear such Complaint, then any such Magistrate or Magistrates, Justice or Justices is and are hereby directed and authorized, by any Order under his or their respective Hand or Hands, to adjudge and order what reasonable Sum of Money shall be paid by any

Penalty for
obstructing
any Search
authorized by
this Act.

Offences
occasioned by
the wilful
Default of
Journeymen
and Servants,
how to be
punished.

such Journeyman or Servant to his Master or Mistress, as or by way of Recompence to him or her for the Money he or she shall have paid by reason of the wilful Act, Neglect, or Default of any such Journeyman or Servant; and if any such Journeyman or Servant shall neglect or refuse, on his Conviction, to make immediate Payment of the Sum of Money which any such Magistrate or Magistrates, Justice or Justices, shall order him to pay by reason of such his said wilful Neglect or Default, then any such Magistrate or Magistrates, Justice or Justices, within his or their respective Jurisdiction, is or are hereby authorized and required, by Warrant under his or their Hand and Seal, or Hands and Seals, to cause such Journeyman or Servant to be apprehended and committed to the House of Correction, or some other Prison of the City, County, Division, or Place, in which such Journeyman or Servant shall be apprehended or convicted, to be kept there to hard Labour to any Term not exceeding Six Calendar Months from the Time of such Commitment, as to such Magistrate or Magistrates, Justice or Justices, shall seem reasonable, unless Payment shall be made of the Money ordered after such Commitment, and before the Expiration of the said Term of Six Months.

Bakers shall
not bake
Bread or Rolls
on the Lord's
Day,

nor sell Bread,
nor bake Pies,
&c., except
between cer-
tain Hours.

XVI. Provided always, and be it further enacted, That no Master, Mistress, Journeyman, or other Person respectively, exercised or employed in the Trade or Calling of a Baker within the Limits aforesaid, shall, on the Lord's Day, or on any Part thereof, make or bake any Bread, Rolls, or Cakes of any Sort or Kind; or shall, on any other Part of the said Day than between the Hours of Nine of the Clock in the Forenoon and One of the Clock in the Afternoon, on any Pretence whatsoever, sell or expose to Sale, or permit or suffer to be sold or exposed to Sale, any Bread, Rolls, or Cakes, of any Sort or Kind; or bake or deliver, or permit or suffer to be baked or delivered, any Meat, Pudding, Pie, Tart, or Victuals, except as herein-after is excepted, or in any other Manner exercise the Trade or Calling of a Baker, or be engaged or employed in the Business or Oeupation thereof, save and except so far as may be necessary in setting and superintending the Sponge to prepare the Bread or Dough for the following Day's Baking; and every Person offending against the last-mentioned Regulations, or any One or more of them, or making any Sale or Delivery hereby allowed otherwise than within the Bakehouse or Shop, and being thereof convicted before any Justice of the Peace of the City, County, or Place where the Offence shall be committed, within Six Days from the Commission thereof, either upon the View of such Justice, or on Confession by the Party, or Proof by One or more credible Witness or Witnesses upon Oath or Affirmation, shall for every such Offence pay and undergo the Forfeiture, Penalty, and Punishment herein-after mentioned; (that is to say), for the First Offence the Penalty of Ten Shillings; for the Second Offence the Penalty of Twenty Shillings; and for the Third and every subsequent Offence respectively the Penalty of Forty Shillings; and shall moreover, upon every such Conviction, bear and pay the Costs and Expences of the Prosecution, such Costs and Expences to be assessed, settled, and ascertained by the Justice convicting, and the Amount thereof, together with such Part of the Penalty as such Justice shall think proper to be allowed to the Proseutor or Prosecutors for Loss of Time in instituting and following up the Prosecution, at a Rate not exceeding Three Shillings *per Diem*, and to be paid to the Proseutor or Prosecutors for his, her, and their own Use and Benefit, and the Residue of such Penalty to be paid to such Justice, and within Seven Days after his Receipt thereof to be transmitted by him to the Churchwardens or Overseers of the Parish or Parishes where the Offence shall be committed, to be applied for the Benefit

of the Poor thereof; and in case the whole Amount of the Penalty, and of the Costs and Expences aforesaid, be not forthwith paid after Conviction of the Offender or Offenders, such Justice shall and may, by Warrant under his Hand and Seal, direct the same to be raised and levied by Distress and Sale of the Goods and Chattels of the Offender or Offenders; and in Default or Insufficiency of such Distress, commit the Offender or Offenders to the House of Correction, on a First Offence for the Space of Seven Days, for a Second Offence for the Space of Fourteen Days, and on a Third or any subsequent Offence for the Space of One Month, unless the Whole of the Penalty, Costs, and Expences be sooner paid and discharged: Provided nevertheless, that it shall be lawful for every Master or Mistress Baker, residing within the Limits aforesaid, to deliver to his or her Customers, on the Lord's Day, any Bakings until Half an Hour past One of the Clock in the Afternoon of that Day, without incurring or being liable to any of the Penalties in this Act contained.

Bakings may be delivered till Half-past One on Sundays.

XVII. Provided always, and be it further enacted, That no Person who shall follow or be concerned in the Business of a Miller, Mealman, or Baker, shall be capable of acting or shall be allowed to act as a Justice of the Peace under this Act, or in putting in Execution any of the Powers in or by this Act granted; and if any Miller, Mealman, or Baker shall presume so to do, he or they so offending in the Premises shall, for every such Offence, forfeit and pay the Sum of One hundred Pounds, to any Person or Persons who will inform or sue for the same, to be recovered, together with full Costs of Suit, in any of His Majesty's Courts of Record at *Westminster*, by Action of Debt, Bill, Plaint or Information, wherein no Essoign, Wager of Law, or more than One Imparance, shall be allowed.

No Miller, Mealman, or Baker to act as a Justice of Peace in the Execution of this Act on Penalty of £100.

XXXI. Provided also, and be it further enacted, That no Person shall be convicted of any Offence under this Act, unless the Complaint is made within Forty-eight Hours after the Offence shall have been committed, except in Cases of Perjury; and that no Person who shall be prosecuted to Conviction for any Offence done or committed against this Act, shall be liable to be prosecuted for the same Offence under any other Law.

Limiting Time of Information.

The General Act of 1836, applicable to Scotland and provincial England, is substantially identical with the above. The Irish Act differs in a few small points. The Irish Act differs from the English in Section V with regard to penalties. In the English Act the penalties under this section are "not exceeding five pounds nor less than forty shillings"; in the Irish Act the penalties are "not exceeding forty shillings nor less than ten shillings".

Special Provisions of the Irish Bread Act.

In Section VI of the English Act, bread sellers are required to keep beam and scales, &c., in a conspicuous place in their shops, "in order that all bread there sold may from time to time be weighed in the presence of the purchaser"; but there is no penalty fixed for not weighing, although a maximum of five pounds is fixed for having no scales or false scales. In the Irish Act the same stipulation is made with regard to keeping the beam and scales, &c., in a conspicuous part of the shop; but the bread there need not be weighed unless required by the purchaser—"in order that every person who may purchase any such bread may, *if he or she shall think proper*, require the same to be weighed in his or her presence". In this Act there is a penalty for not having the scales or having incorrect scales,

&c., of a maximum of five pounds; but the same penalty is also provided if the sellers, "when thereunto required by any person who may purchase any such bread, refuse to weigh the same in the presence of such person, &c.". In the English Act Section VII requires bread sellers to carry scales and weights to weigh bread from time to time. This requirement is entirely omitted from the Irish Act.

In Section VII of the English Act, dealing with mixtures used in bread as allowed in Section IX, the penalties are fixed as a "sum not exceeding ten pounds nor less than five pounds". In the Irish Act, for the same offence the penalties are stated as "not exceeding five pounds nor less than fifty shillings"; and while the offending English or Scottish baker (unless the latter is under a local Act) is in default to be kept in prison "not exceeding six calendar months with or without hard labour", the Irish baker who offends can be incarcerated for only three months. In both Acts the stipulation is made that a conviction is to be published in the local newspaper where the offence has been committed, and the expense of publishing is to be paid out of the penalty paid by the baker; but in the Irish Act there is a special provision not in the English one, that the "Proprietor, Printer and Printers, and every other person or persons concerned therein are authorized to print and publish the same when required to do so by the order of the Magistrate, &c., and he, or she, or they, are . . . indemnified from any prosecution . . . by or from any person or persons whomsoever, any law, statute, or usage to the contrary thereof in anywise notwithstanding".

In the English Act the mere act of putting into the meal, flour, &c., any substance, "not being the real and genuine produce of the corn or grain, . . . or any meal or flour of one sort of grain as the meal or flour of any other sort", is an offence punishable with a fine of twenty pounds. In the Irish Act the offence is stated more precisely: if anyone mixes "any ingredient or mixture whatsoever, not being the real and genuine produce of the grain, . . . or if any person in Ireland shall knowingly sell, &c., . . . either separately or mixed, any corn, meal, or flour which shall not be equal or superior in quality or goodness to the sample purporting to be a sample of such corn, &c., . . . and produced by the owner . . . or other person selling or exposing or offering the same for sale to the view of the buyer, . . . or shall use or practice any fraud, covin, or deceit by which such corn, meal, or flour shall be made or rendered of *greater weight* than the same respectively would have been in case such mixture, fraud, covin, or deceit had not been practiced". The Irish fines are "not exceeding ten pounds nor less than forty shillings", and the meal, flour, &c., is to be forfeited, one moiety to go to the poor of the parish and one part to the informer.

In the English Act a complaint must be lodged within forty-eight hours from the time the offence had been committed; in the Irish Act fourteen days is allowed in which to lodge the complaint. With the exception of the differences mentioned above, the English and Irish Acts are in all respects practically alike.

In the London Act of 1822, Section VI prohibits the use of the terms quartern, peck, &c., but this stipulation is omitted from the other Acts: "during the space of two years from the commencement of this Act (1822) (it shall not be lawful) to make and sell or offer for sale . . . any loaf or loaves of the description or denomination of the peck, half peck, or quarter of a peck loaf or loaves, or any or either of them". The penalty for the offence is forty shillings.

Section VII of the London Act is also exclusive. It makes it compulsory "*before the expiration of two years from the commencement of this Act* to weigh every loaf sold in his shop, house, or premises in the presence of the party purchasing the same, whether required by the purchaser so to do or not". This provision, although at first limited to two years, is no doubt responsible for the shop custom prevalent still in London, but hardly anywhere else, of weighing bread at the time of sale.

The London Act in Section IX makes provision for carrying scales and weights in any cart or carriage "drawn by a horse, mule, or ass". The other Acts do not stipulate how the cart or carriage is to be drawn. The London Act in Section XVI contains stipulations limiting the kind of work bakers are allowed to do on Sunday. This provision is not stated in the other Acts.

One of the strange things about the Bread Laws and their administration is that they have never been regarded with strictness by the trade, nor have they ever been administered by those who have taken this work upon them in the spirit of the statutes. In spite of the provision that for two years after the passing of the London Act loaves should not be sold by denomination of quartern, &c., this name still survives, but has now come to be considered as representing, in the case of the quartern, a four-pound loaf. At the time when the term "quartern" had statutory sanction it represented a loaf weighing 2 lb. 5½ oz. and was the quarter of a peck loaf, which the assize law had definitely fixed at 17 lb. 6 oz. The understanding was that twenty such peck loaves could be made from a sack of flour weighing 280 lb., so that the peck of flour was 14 lb. Some men are under the impression that the quartern is to represent a quarter of a stone avoirdupois weight, but it is really based as noted on the English corn or dry measure, in which two pints are one quart, four quarts one gallon, two gallons one peck, four pecks one bushel, and eight bushels one quarter. The method of selling bread by the gallon still obtains in many districts in the south of England, although the old statutes designated this size of loaf as a half peck. The old statutes did not require such a high yield of bread as now obtains, because flour being from home-grown wheat was much softer than it is now. Twenty peck loaves would only be about 347 lb. of bread, while 94 four-pound loaves amount to 376 lb. of bread. If there was any relation between the old statute quartern and the new one which custom has to some extent determined, the new should weigh a little over 4 lb. 9 oz., because there are still 20 pecks or 80 quarter-pecks in the sack of

flour. But the law, both London and provincial, distinctly specifies that "the avoirdupois weight of sixteen ounces to the pound and the several gradations thereof" is only to be used in the sale of bread, the mention of gradations of a pound clearly indicating that the statute did not intend that bakers must keep to even pounds or multiples of a pound, but rather that they should graduate the weight of their loaves by ounces or other convenient fractions of a pound. This has been recognized in Yorkshire and the north of England generally, and in many parts of the south and west of Ireland; but generally the practice has been to keep to even pounds as in the days when an assize was set, although even under that system bread could be sold, if the baker elected to sell it that way and not otherwise, at a constant price all the time, but varying the weight of the loaf in accordance with the market price of flour. This was

Assize Bread. called "Assize Bread" as distinguished from that sold by "Peek", "Half Peek", and "Quartern", which was called "Priced Bread". The weights of the one and the price of the other were always set by the magistrates who made the assize at the same time and according to a definite plan. An actual copy of one of the last assize tables set in use at the end of the eighteenth century is given as an appendix, and will show the relation of "assize" and "priced" bread and of wheaten and household bread. The "explanation" accompanying the table is that published with the table when it was in force.

The Bread Acts now in force contain no instructions for any official person authorized to institute proceedings against offenders. Their **Prosecutions under the Bread Acts.** administration was practically left to the initiative of anyone who cared to take up the rôle of common informer, the reward of such a one for his trouble and ingenuity in securing convictions being a substantial share of the fines. When the Act was newly passed it was quite an occupation with some men to travel from town to town spying on bakers and acting as common informers, in the meantime making a living from their share of the fines. Within the last twenty or twenty-five years prosecutions under the Bread Acts have been mostly undertaken by inspectors of weights and measures. The requirement that bakers in Britain must carry scales and weights in vehicles used for bread delivery has given inspectors power to demand to see those scales and weights, and to ascertain whether they are properly adjusted; but the Bread Laws give the inspectors no power to demand that the bread shall be weighed unless they are the actual purchasers of the loaves. They have, of course, the status of common informers under the Acts, and as such can institute proceedings. The trade in many localities does not seem aware of the status and powers of the weights and measures inspectors in this matter, and some of those gentlemen, relying on the ignorance of the bakers concerning the law, and on the common fear of anything official, are in the habit of acting as though the Bread Act required the baker to weigh all his loaves two pounds only, and as though the whole power of administering the

Act were vested in the inspectors. Thus in some districts it is a common occurrence for the inspector to stop a baker's cart in the roadway and not only ask for the production of the scales and weights, which is within his right, but also demand that the majority of the loaves in the cart or van be weighed, although he makes no purchase. It is not always good policy even to appear to obstruct an inspector when he is over-zealous and oversteps his authority in a matter of this kind, but the baker would be perfectly within his legal right in refusing to weigh one loaf at the bidding of an inspector unless the latter purchased the loaf or as many as he desired weighed. Besides, there is no compulsion on the baker to sell bread to an inspector if it is inconvenient to do so. In any case, when a loaf is sold it should be at least the weight it purports to be, and should not be sold on the wide and general assumption that it is a two-pound loaf. Inspectors are not very guilty of asking for a two-pound loaf as they ought to ask if that is the weight they want, but with a view to catching the baker in what may be only a technical offence they ask simply for a loaf. The delivery men should be carefully instructed not to sell loaves in such circumstances without stating the weight they purport to be, and the guarantee given by the seller at the time of sale should be of a weight low enough to include the lightest loaf, although this guarantee may be less than the actual weight of the majority of the loaves. If the baker is precise in declaring the minimum weight he guarantees his loaves to be, and if the actual weight at the time of sale is up to or over that minimum, this has been recognized by the higher courts as proper compliance with the law as to "selling bread by weight".

Probably the majority of inspectors of weights and measures are in favour of a return to absolutely fixed weights for bread, allowing the baker to alter his price to suit the market price of flour. **The Problem of Fixed Weights.** This system was in force under the Assize Laws, and virtually broke down because magistrates in setting the price of bread could not always, or indeed often, fix that price in accordance with the market price of flour. If loaves must weigh two pounds, and the smallest alteration in the price of a loaf of this size cannot be less than a farthing, an alteration by that amount is equivalent to an alteration in flour prices of about 4s. per sack. But flour may not vary by so much as this for years, with the result that the public—only because of this method of selling bread—have either to pay more than the proper price for their bread, or the baker has to be content with less than his fair profit. This difficulty was constantly before the magistrates when they had the duty of setting the price, and they not infrequently settled it in favour of the public to the detriment of the baker. The same difficulty still confronts the Master Bakers' Associations when they attempt to deal with the price of bread, and in the war of competition which is now so intense the price is still very often settled in favour of the public. The tendency to do this is much increased by the fact that there are, in large towns

especially, one or more considerable firms who remain outside the local associations and refuse to be ruled by them; and these firms not infrequently take the opportunity, when flour prices are rising and they have a quantity bought forward, to increase their activity, and by keeping prices down, or by selling under their neighbours, to increase considerably the amount of their business; on the other hand, when obdurate bakers are free from stocks in a falling market they may drop the price of bread long before it is profitably possible. As long as there is such a large margin as 4s. between the prices of flour, warranting a change in the price of bread, this kind of unfair competition will always be possible and more or less effective. Those bakers who cannot bear the strain of it are forced either to lose money directly or to reduce the quality of their bread and probably reduce their trade. The London County Council in the beginning of 1905 made an attempt to get a new Bread Bill passed which would have perpetuated and given statutory sanction to the unsatisfactory condition of things explained above; but by the vigorous action of the trade, which pointed out the difficulties confronting the baker if he had to adhere rigidly to fixed weights, the preamble of the Bill was found not proved. This Bill proposed to fix the weight of loaves at one pound or a complete number of pounds; to make all bread plain bread unless it weighed less than one pound; to give inspectors power of search and power to weigh loaves anywhere and everywhere; to give the power of administering the Act into the hands of the City authorities and of the London County Council; and to take all the fines into the coffers of these bodies.

When this Bill was rejected, considerable impetus was given to a movement towards selling bread in smaller loaves. The liberty allowed by the Bread Act of 1822 was taken advantage of, and the weight of loaves was altered in accordance with the market price of flour. This method has spread very considerably, and in some of the larger cities, notably in Liverpool, has had a very marked effect on the bread trade. Under this system it is possible, by the addition or subtraction of half an ounce on a small loaf, to make nearly the right allowance for a fall or rise in the market price of flour of about 6*d.* per sack (280 lb.). Customers, when flour prices are moving, do not readily object to the baker recovering the extra cost of his flour by reducing his weight by only an equivalent amount of bread; and if two bakers had only an ounce or two ounces difference in the weight of their loaves, he with the higher weight would not be nearly so likely to take away the customers of the other as if the former were selling at a farthing less in price. Under this system, therefore, those bakers who desire to keep their bread values always as nearly as possible in accordance with the market price of flour will find this system much more convenient to that end than the other system of keeping fixed weights and altering prices. There is no doubt that the law as it now stands was intended to facilitate this system of selling bread, but it also intends that bread must still be sold by weight

and not otherwise. Selling by weight may mean actual weighing at the time of sale in presence of the customer, but, as already indicated, the requirement is satisfied if the weight is sufficiently indicated to prevent any misunderstanding on the part of the customer. A sufficient indication may be a declaration of the minimum weight—that is, the weight under which the loaf is guaranteed not to be. This minimum weight guarantee is only allowable in the case of bread because, so far as the finished loaf is concerned, it can neither be added to nor taken from after it is baked and remain such a loaf as a customer would have. From the nature of dough, the difference of heat at various parts of the oven, and other conditions not always controllable by the baker, there must be a large margin allowed for differences in weight; so the baker is allowed a minimum weight as a guarantee, with a considerable margin for differences due to the conditions mentioned. By this means the public are in no sense deceived or cheated, and must as a fact always get more weight than they are guaranteed. There is some doubt as to what is a proper declaration or guarantee of weight. There may be many effective ways of making such a declaration, but it has been settled so far that it is sufficient if the actual or guaranteed weight is declared verbally at the time of sale; if the loaf is properly weighed in presence of the customer, although nothing is said; if the paper in which the loaf is wrapped has the guaranteed weight properly printed on it; if the loaf has a stamp on it, or a label attached with the weight; if an announcement is prominently displayed in the shop where the loaf is sold or on the vehicle from which it is sold, and if this notice is so prominent that customers can hardly fail to see it, or if their attention is specially directed to it. It may be pointed out that if the system of selling bread at fixed prices and altering weights is adopted in a surreptitious way and no declaration of weight is made, nor any means taken to make customers aware of the weight of bread they are buying, then it is distinctly contrary to both the letter and the spirit of the law, and with a little vigour on the part of the trade itself such a method might be stamped out. If allowed, it would certainly tend to foster cutting and underselling in both weight and price. But if the system is adopted, and declaration of weight in some effective way made an integral part of it, there is no reason why the associations of the trade could not regulate weights as well at least as they now regulate prices; and the system has none of the disadvantages of large market margins, which on occasions create excessive competition and always encourage a kind of gambling.

Minimum
Weight
Guarantee.

APPENDICES

- I. TABLE OF THE ASSIZE AND PRICE OF BREAD MADE FROM WHEAT.
- II. CASE LAW OF THE BREAD ACTS.
- III. WEIGHTS AND MEASURES.
- IV. USEFUL CONSTANTS AND DATA FOR REFERENCE.
- V. DISHES IN SEASON.
- VI. DATES OF WHEAT HARVESTS OF THE WORLD.

APPENDIX I

TABLE OF THE ASSIZE AND PRICE OF BREAD MADE FROM WHEAT

EXPLANATION.—Column No. 1 contains the price of the bushel of wheat (Winchester Measure), from 5s. to 14s. 6d., the allowance of the Magistrate or Justices to the Baker for baking being included; and in Columns No. 2, under the title of *The Assize Table*, will be found the weights of the several loaves; while in Columns No. 3, under the head *Price Table*, the prices of the peck, half-peck, and quartern loaves are stated. So that, for example, if the price of wheat in the market is 5s. the bushel, and the Magistrates allow 1s. 6d. for baking, find 6s. 6d. in Column No. 1, and even therewith, under Columns No. 2, or *The Assize Table*, will be found the weights of the several loaves which go under the name of *Assize Bread*, and under Columns No. 3, or *The Price Table*, the prices of the loaves which are included under the denomination of *Priced Bread*.

| No. 1. | | | No. 2.—THE ASSIZE TABLE. | | | | | | | | | | | | No. 3.—THE PRICE TABLE. | | | | | | | | | | | | | | | | | | |
|--|---|----|--------------------------|---------|------------|-------------------|----------|---------|---------------------|---------|----------|----------------|------------|---------|-------------------------|---------|---------|------------|----------|----|-----------------|----|----------|----------|---------|----|----------|----|---------|----|----|----|---|
| Price of the Bish. Wheat and Baking. | | | LARGE ASSIZE BREAD. | | | | | | SMALL ASSIZE BREAD. | | | | | | PRICED BREAD. | | | | | | | | | | | | | | | | | | |
| | | | Eighteenpenny Loaf. | | | Twelvepenny Loaf. | | | Sixpenny Loaf. | | | Twopenny Loaf. | | | Penny Loaf. | | | Peck Loaf. | | | Half-peck Loaf. | | | Quatern. | | | | | | | | | |
| s. d. | | | Wheaten. | | Household. | | Wheaten. | | Household. | | Wheaten. | | Household. | | Wheat. | | H'hold. | | Wheaten. | | H'hold. | | Wheaten. | | H'hold. | | Wheaten. | | H'hold. | | | | |
| | | | lb. | oz. dr. | lb. | oz. dr. | lb. | oz. dr. | lb. | oz. dr. | lb. | oz. dr. | lb. | oz. dr. | lb. | oz. dr. | oz. dr. | oz. dr. | s. d. | f. | s. d. | f. | s. d. | f. | s. d. | f. | s. d. | f. | s. d. | f. | | | |
| 5 | 0 | 13 | 9 | 10 | 18 | 6 | 7 | 9 | 1 | 1 | 12 | 4 | 4 | 4 | 8 | 9 | 6 | 2 | 2 | 1 | 8 | 3 | 2 | 0 | 11 | 2 | 0 | 5 | 3 | 0 | 4 | 1 | |
| 5 | 3 | 13 | 0 | 9 | 17 | 6 | 1 | 8 | 11 | 1 | 11 | 9 | 6 | 4 | 5 | 8 | 5 | 12 | 11 | 1 | 7 | 3 | 1 | 14 | 14 | 11 | 9 | 15 | 7 | 2 | 0 | 0 | |
| 5 | 6 | 12 | 8 | 3 | 16 | 7 | 7 | 8 | 5 | 8 | 10 | 15 | 10 | 4 | 2 | 12 | 5 | 7 | 13 | 1 | 6 | 4 | 1 | 13 | 4 | 11 | 2 | 14 | 10 | 2 | 1 | 0 | |
| 5 | 9 | 11 | 13 | 0 | 16 | 0 | 11 | 7 | 14 | 0 | 10 | 11 | 2 | 3 | 15 | 0 | 5 | 9 | 1 | 5 | 0 | 1 | 12 | 8 | 10 | 8 | 14 | 4 | 2 | 2 | 1 | 0 | |
| 6 | 0 | 11 | 6 | 4 | 15 | 4 | 2 | 7 | 9 | 8 | 10 | 2 | 12 | 3 | 12 | 12 | 5 | 1 | 6 | 1 | 4 | 4 | 1 | 11 | 2 | 10 | 2 | 13 | 9 | 2 | 1 | 8 | |
| 6 | 3 | 10 | 14 | 6 | 14 | 10 | 9 | 7 | 4 | 4 | 9 | 12 | 6 | 3 | 10 | 2 | 4 | 14 | 3 | 1 | 3 | 6 | 1 | 10 | 1 | 9 | 11 | 13 | 1 | 8 | 2 | 1 | |
| 6 | 6 | 10 | 6 | 13 | 14 | 3 | 8 | 6 | 15 | 4 | 9 | 7 | 11 | 3 | 7 | 10 | 4 | 11 | 13 | 1 | 2 | 9 | 1 | 9 | 4 | 12 | 10 | 2 | 6 | 0 | 1 | 10 | |
| 6 | 9 | 10 | 1 | 7 | 13 | 9 | 10 | 6 | 11 | 10 | 9 | 1 | 1 | 3 | 5 | 13 | 4 | 8 | 9 | 1 | 1 | 15 | 1 | 8 | 3 | 9 | 0 | 12 | 1 | 1 | 11 | 0 | |
| 7 | 0 | 9 | 12 | 7 | 13 | 0 | 9 | 6 | 8 | 4 | 8 | 11 | 1 | 3 | 4 | 2 | 4 | 5 | 8 | 1 | 1 | 6 | 1 | 7 | 3 | 8 | 11 | 9 | 2 | 8 | 0 | 1 | |
| 7 | 3 | 9 | 7 | 11 | 12 | 8 | 3 | 6 | 5 | 2 | 8 | 5 | 8 | 3 | 2 | 9 | 4 | 2 | 12 | 1 | 0 | 14 | 1 | 6 | 4 | 8 | 7 | 11 | 2 | 9 | 0 | 2 | |
| 7 | 6 | 9 | 3 | 3 | 12 | 0 | 8 | 6 | 2 | 2 | 8 | 0 | 5 | 3 | 1 | 1 | 4 | 0 | 3 | 1 | 0 | 6 | 1 | 5 | 6 | 8 | 3 | 10 | 11 | 2 | 2 | 0 | 1 |
| 7 | 9 | 8 | 13 | 12 | 11 | 10 | 15 | 5 | 14 | 8 | 7 | 12 | 10 | 2 | 15 | 4 | 3 | 14 | 5 | 0 | 15 | 12 | 1 | 4 | 12 | 7 | 14 | 10 | 6 | 2 | 2 | 0 | 1 |
| 8 | 0 | 8 | 9 | 4 | 11 | 6 | 4 | 5 | 11 | 8 | 7 | 9 | 8 | 2 | 13 | 12 | 0 | 15 | 4 | 1 | 4 | 4 | 1 | 4 | 4 | 7 | 10 | 10 | 2 | 3 | 0 | 2 | 2 |
| 8 | 3 | 8 | 3 | 11 | 11 | 2 | 12 | 5 | 7 | 13 | 7 | 7 | 3 | 2 | 11 | 14 | 3 | 11 | 9 | 0 | 14 | 10 | 1 | 3 | 14 | 7 | 5 | 9 | 15 | 3 | 2 | 0 | 2 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 8 | 9 | 0 | 3 | 3 | 11 | 9 | 0 | 8 | 4 | 2 | 2 | 1 | 5 | 10 | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
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REMARKS.—The weights of the wheaten loaves are three-fourths of the weights of the household loaves; and if the Magistrates or Justices shall think fit to allow of any white loaves of the price of one penny or twopence, they are to weigh, at all times, three-fourths of the weight of the wheaten loaves of the same price.

The prices of the household loaves are always three-fourths of the prices of the wheaten loaves; and where it should be thought proper to allow of half-quatern loaves, the prices of such loaves (if sold singly) are to be half a farthing higher than is allowed by this Table, when it shall so happen that the farthing is split.

Magistrates and Justices, within their respective jurisdictions, being to set the Assize and fix the price of the several loaves of bread, having respect to the price which the grain, meal, or flour, of which the same are made, shall bear in the market; but no provision being made how they should know what price the respective sorts of meal and flour should be esteemed to bear, in proportion to the price of wheat, they are therefore to take notice, That the peck loaf of each sort of bread is to weigh, when well baken, 17 lb. 6 oz. avoirdupois, and the rest in proportion; and that every sack of meal or flour is to weigh 2 ewt. 2 qr. net; and that from every sack of meal or flour there ought to be produced, on an average, 20 such peck loaves of bread; and, by observing the said Rule, Magistrates and Justices may at all times know if the Baker hath more or less than the allowance they intend to give him.

APPENDIX II

CASE LAW OF THE BREAD ACTS

Extract from a Lecture to the Association of Inspectors of Weights and Measures on May 7th, 1909, by Mr. H. Van Tromp, Inspector of Weights and Measures, South Staffordshire.

| I.—SALE BY WEIGHT | | | |
|-------------------|---|--|---|
| Date. | Case. | Short Facts. | Result. |
| 1851 | <i>R. v. Kingsby</i> 15 J.P. 65; 16 L.T. 48. | Refusal to weigh. | Conviction affirmed. |
| 1867 | <i>Jones v. Huxtable</i> 31 J.P. 534; 16 L.T. 381. | Quartern loaf demanded. Not weighed. 2½ oz. deficient of 4 lb. Contended (1) That the law does not require bread to be weighed unless on request. (2) That the weighing of dough is sufficient compliance. | Held. Not a sale by weight. |
| 1867 | <i>Williams v. Deggan</i> 31 J.P. 807; 16 L.T. 492. | Quartern loaf. Unweighed. 5 oz. deficient. | Conviction affirmed. |
| 1869 | <i>Milton v. Troake</i> 33 J.P. 821; 20 L.T. 563. | "Quart Loaf." 1 oz. deficient. Held to be on all-fours with <i>Jones v. Huxtable</i> . | Conviction affirmed. |
| 1869 | <i>R. v. Kennett</i> <i>R. v. Saunders</i> 33 J.P. 824. | "4 lb. loaf" asked for. Not weighed. 6 oz. deficient. Contended that because the loaf was specially baked to make it crusty it could be treated as fancy bread. | Held. Bread or fancy bread must be sold by weight if asked for by weight. |

| | | | |
|------|--|--|--|
| 1870 | Hill <i>v.</i> Browning 34 J.P. 774; 22 L.T. 584. | Custom was to charge same price for bread and vary the weight according to market price of corn. Dough weighed but not bread. | Conviction affirmed. Held. That it is weight of bread and not of dough that was intended by the Act. |
| 1891 | Copeland <i>v.</i> Walker 55 J.P. 809; 65 L.T. 262. | Quartern loaf purchased from cart. Loaf not weighed, although scales were carried. 2½ oz. short of 2 lb. | Held. That conviction was right. (Reference to Sec. 32 of the W. and M. Act, 1889.) |
| 1899 | L.C.C. <i>v.</i> Read 63 J.P. 757; 81 L.T. 452. | 2d. loaf asked for. Loaf similar in shape to ordinary bread supplied. Not weighed. 2 oz. short of 2 lb. Magistrates dismissed case on the ground that only a 2d. loaf was asked for. | Held. Magistrates wrong. Conviction should have followed. |
| 1902 | Cox <i>v.</i> Bleins 66 J.P. 407; 86 L.T. 563. | Half-quartern loaf demanded. Loaf with two rolls put into pan of scale against a 2-lb. weight. Scale did not turn. | Held. Not a sale by weight. |
| 1903 | Bridge <i>v.</i> Passman 68 J.P. 129. | Notice issued to customers, "We sell each loaf as weighing 1¼ lb. only. Price 2½d." Purchaser had dealt with baker for some period on these terms. Three loaves weighed by inspector on delivery weighed over 1¾ lb. | Held. Sale by weight. |
| 1905 | Sleater <i>v.</i> Brewsters, Ltd. 2 J.R. 258. | Irish case. Facts on all-fours with L.C.C. <i>v.</i> Read. | Held. Justices wrong in dismissing case. |
| 1905 | Welch <i>v.</i> Cutler 92 L.T. 239; 69 J.P. 149. | Loaf asked for. 3d. paid. ½ oz. deficient of 2 lb. Contended that sufficient compliance as loaves had been weighed in batches, three at a time. | Held. Not a sale by weight. Seller would not know weight of particular loaf. |
| 1906 | Blackshaw <i>v.</i> Swathmore etc. Co-op. Soc. (Reported in Trade Journals). | Loaf of bread demanded. Not weighed. 3d. charged. Loaf weighed. 1 oz. over customary weight of district. Previously weighed by shopman. Argued that not a sale by weight within the meaning of Sec. 4. | Held. Justices right in dismissing case. |
| 1908 | Houghton <i>v.</i> Buxton (Reported in Trade Journals). | Quartern loaves were sold from cart at 5½d. Appellant asked for half-quartern and paid 2¾d. After sale appellant requested carman to weigh loaf. Loaf deficient of 2 oz. Justices held that the purchase, the payment, and the weighing constituted one transaction. | Held. Not a sale by weight. |
| 1908 | Matthison <i>v.</i> Bindley 72 J.P. 346. | Loaf weighed on being taken out of oven. Bad shape, put aside. Sold by mistake. 1½ oz. deficient. Not weighed to customer. | Held. Not sold by weight. |

CASE LAW OF THE BREAD ACTS.—*Continued*

| Date. | Case. | Short Facts. | Result. |
|-----------------|--|--|--|
| 1908 | <i>Evans v. Jones</i> 72 J.P. 481. | 2-lb. loaf purchased from vanman. By scales and weights in cart, it could be only ascertained that loaf weighed less than 2 lb. | Held. No weighing evidence in reference to a 2-lb. loaf. Conviction affirmed. |
| 1908 | <i>Blackledge & Sons, Ltd. v. Bolshaw</i> 72 J.P. 383. | Loaves weighed previously to customer entering shop, When handed to customer, who asked for "A 3 <i>d.</i> best cottage loaf", loaf bore a printed band, "B.'s fancy bread 3 <i>d.</i> and 1½ <i>d.</i> per loaf (2 <i>d.</i> per lb.). Always over-weight varying according to price of flour." Loaf weighed. 1 lb. 12 oz. Proved manager weighed each loaf in course of business, and if it exceeded 1½ lb. similar band was put on. | Held. That there was a weighing with reference to the sale. Appeal upheld. |
| II.—FANCY BREAD | | | |
| 1869 | <i>R. v. Wood</i> 33 J.P. 823; 20 L.T. 654. | Loaf at time of sale held not to be fancy bread, although it would have been sold as such in 1836. | Held. Conviction affirmed. |
| 1873 | <i>Aerated Bread Co. v. Gregg</i> 37 J.P. 388; 28 L.T. 816. | Ordinary bread except that carbonic acid gas was forced into it. Did not resemble what was called fancy bread at time of passing of Act. | Conviction affirmed. |
| 1896 | <i>V. V. Bread Co. v. Stubbs</i> 60 J.P. 424; 74 L.T. 704. | Two loaves resembling ordinary quartern loaves sold without weighing. Each deficient. Contended. Loaves made by patented process. | Conviction affirmed. Use of superior yeast does not make the loaves "fancy". Loaf must differ in appearance from ordinary bread. The test is what is fancy at the time of sale, not at passing of the Act. |
| 1897 | <i>Mills v. Allwood</i> Quarter Sessions. | Brown bread. Flour sold to bakers who made loaves in any manner they chose. Contended. That every brown loaf was fancy bread. | Held. Sold as brown loaf. No distinction in shape. One of many kinds of brown bread. |
| 1900 | <i>Etchells v. Harrison</i> Not reported. | Bread made of flour, milk, and lard. Not weighed. Like an ordinary cottage loaf in appearance. | Case remitted for justices to convict. |

| | | | |
|---------------------------|--|---|---|
| 1909 | Bailey v. Barsley 73 J.P. Reports 138. | Officer asked for small loaf, and bought one for 1d. Loaf weighed 10½ oz. Contended. That it was fancy bread because of its small size. Justices held loaf not similar to ordinary bread, but distinctly different, and dismissed case. | Held. That justices could find that bread made up in this way <i>was</i> fancy bread. Contention. That bread cannot be fancy unless quality (as well as size and shape) is different to that of ordinary household bread <i>not</i> upheld. |
| III.—WEIGHING INSTRUMENTS | | | |
| 1876 | Robinson v. Cliff 40 J.P. 615; 34 L.T. 689. | Wholesale delivery of bread. No scales in cart. | Conviction affirmed. |
| 1884 | Ridgeway v. Ward 49 J.P. 150; 51 L.T. 704. | Order given for bread, customer not seeing it weighed. | Held. Weighing by baker previous to delivery not sufficient. Scales must be carried. |
| 1885 | Daniel v. Whitfield 40 J.P. 694; 53 L.T. 471. | Bread weighed in shop in presence of customer. Afterwards sent to purchaser per cart. | Held. Scales need not be carried. |
| 1894 | R. v. Smith 58 J.P. 445; 70 L.T. 373. | Bread Acts, 1822, Secs. 8, 9; and 1836, Secs. 6, 7. No scales in shop where bread sold. Sec. provides no penalty. Magistrates refused to hear case. Mandamus asked for. | Rule discharged. |
| IV.—LAYING INFORMATION | | | |
| 1878 | Robinson v. Cliff 40 J.P.; 34 L.T. 689. | Sec. 31. "48 hours." | Held. That an intervening Sunday is to be exclusive and not to be reckoned as part of the 48 hours. Note that the words, "Within such reasonable time as shall seem fit to the justices" are omitted in the London Act. |

APPENDIX III

WEIGHTS AND MEASURES

Throughout this work the weights and measures employed are those of the Metric System, the Avoirdupois Weights, and the Imperial Measures of Capacity. A gill in certain parts of the Midlands and the North of England is understood to be half a pint imperial, but this is a purely local use of the word. The Scotch pint again is a local measure, varying considerably in different districts. In some districts a Scotch pint is about 2 quarts or 4 imperial pints, in others it may be as much as $4\frac{1}{2}$ or even 5 imperial pints. The pint and gill referred to throughout this work are those of the imperial measurement.

In the Midlands a sack of flour weighs 224 lb. (4 bushels); in all other parts of the United Kingdom it weighs 280 lb. (5 bushels). A sack of flour from Australia weighs 200 lb., and the Australian ton is 2000 lb., whilst the imperial ton is 2240 lb. A barrel of flour weighs 196 lb. A bag of flour is always understood as 140 lb. By a quarter of wheat is understood 480 lb. or 8 bushels of 60 lb.

| | | | | | | | |
|--------------|---|--------|---------|--------------|---|---------------|---------|
| 1 oz. | = | 28.35 | grams. | 1 cubic foot | = | 28.32 | litres. |
| 1 lb. | = | 453.6 | „ | 1 gallon | = | 4.3435 | „ |
| 1 gram | = | 15.43 | grains. | 1 quart | = | 1.1338 | litre. |
| 1 oz. | = | 437.5 | „ | 1 pint | = | .56796 | „ |
| 1 lb. | = | 7000 | „ | 1 litre | = | { 61.03 | c. in. |
| 1 kilogram | = | 2.2 | lb. | | | { or .22 of 1 | gallon. |
| 1 cubic inch | = | 16.386 | c.c. | | | | |

APPENDIX IV

USEFUL CONSTANTS AND DATA FOR REFERENCE

1 litre of hydrogen weighs .0896 gram.
 11.2 litres „ „ 1 gram.
 Specific gravity of air compared with hydrogen is 14.43.

WEIGHT OF WATER

| | |
|----------------------------|------------------|
| 1 gallon = 10 lb. | 1 gill = 5 oz. |
| 1 quart = $2\frac{1}{2}$ „ | 1 c.c. = 1 gram. |
| 1 pint = $1\frac{1}{4}$ „ | |

Latent heat of steam = 537 H.U. (965 F.).
 „ „ water = 79 H.U.

To convert degrees Centigrade into degrees Fahrenheit and vice versa. C. to F.—Multi-

ply by 9 and divide by 5 and add 32. F. to C.—Subtract 32, then multiply by 5 and divide by 9.

Amount of oxygen and equivalent quantity of air required to burn 1 lb. of following fuels:—

| Fuel. | Oxygen. | Air. |
|---------------------|--------------------|------------------|
| Hydrogen ... | 8 lb. | 35 lb. |
| Pure carbon to CO | $1\frac{1}{3}$ „ | $5\frac{1}{2}$ „ |
| „ „ CO ₂ | $2\frac{2}{3}$ „ | 11 „ |
| Dried wood ... | 10 oz. | $2\frac{1}{2}$ „ |
| „ peat ... | $12\frac{1}{2}$ „ | $3\frac{1}{4}$ „ |
| Coke ... | $2\frac{2}{3}$ lb. | 10 „ |
| Coal ... | $1\frac{1}{4}$ „ | 4 „ |

Approximate combining weights of the elements:—

| | |
|------------------------|---------------------|
| Hydrogen... H = 1 | Calcium ... Ca = 40 |
| Oxygen ... O = 16 | Sodium ... Na = 23 |
| Carbon ... C = 12 | Potassium K = 39·1 |
| Nitrogen ... N = 14 | Magnesium Mg = 23·9 |
| Sulphur ... S = 32 | Aluminium Al = 27 |
| Chlorine ... Cl = 35·4 | |

Percentage of dry gluten in flour from various wheats:—

| | |
|-----------------------|------------------------|
| Scotch ... 8 % | Russian ... 10 to 14 % |
| English ... 8 to 10 % | Hungarian 8 ,, 11 % |
| French ... 7 ,, 9 % | Indian ... 10 ,, 13 % |

| | |
|------------------------|------------------------|
| Minnesota 11 to 15 % | Illinois ... 8 to 10 % |
| Kansas ... 9 ,, 12 % | Ohio ... 7 ,, 9 % |
| Michigan... 10 ,, 11 % | Californian 7 ,, 9 % |
| Manitoba 10 ,, 15 % | Australian 8 ,, 11 % |

British-milled flours from mixed wheats are about the same strength as Kansas with 10 to 11 % dry gluten. Flour for bread should not have less than 10·5 % of dry gluten.

The specific heat of flour or the amount of heat required to raise the temperature of 1 lb. of flour through 1° = ·45.

Most strong flours take half their weight of water to make dough for cottage bread. Tin bread requires a softer dough.

APPENDIX V

DISHES IN SEASON

Turkeys from November to March.
 Grouse from August 12th to December 9th.
 Partridges from September 1st to February 11th.
 Pheasants from October.
 Quails all the year.
 Fowls all the year.
 Larks during the winter months.
 Plovers' Eggs from middle of April to middle of May.

Rolled Spiced Beef all the year.
 Pressed Beef all the year.
 Dressed Ox Tongues all the year.
 Pork from September to April.
 Salmon from May to October.
 Galantine of Chicken and Veal all the year.
 Boar's Head all the year.
 Pigeons all the year.

APPENDIX VI

DATES OF WHEAT HARVESTS OF THE WORLD

January.—Australia, New Zealand, Chile, and Argentina.
February and March.—East India and Upper Egypt.
April.—Lower Egypt, Syria, Cyprus, Persia, Asia Minor, India, Mexico, and Cuba.
May.—Algeria, Central Asia, China, Japan, Morocco, Texas, and Florida.
June.—Turkey, Greece, Italy, Spain, Portugal, S. France, California, Oregon, Kansas, &c.

July.—Roumania, Austria-Hungary, S. Russia, Germany, France, South of England, &c.
August.—Belgium, Holland, Great Britain, Manitoba, &c.
September and October.—Scotland, Sweden, Norway, and N. Russia.
November.—Peru and S. Africa.
December.—Burma.

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